noranda

**Annual Report
1981**

Annual Meeting
April 30, 1982, 2:30 p.m.
Royal York Hotel, Toronto, Canada

Reference
In this report unless indicated otherwise, — divisions and/or companies are wholly owned; production is for the calendar year 1981, tons means short tons of 2,000 lbs.; mineral inventories are as at Dec. 31/81; financial data is in Canadian dollars.

Transfer Agent and Registrar
Canada Permanent Trust Company, Toronto, Vancouver, Calgary, Winnipeg, Montreal, Saint John, N.B., Halifax, Charlottetown and St. John's, Nfld.

The Chase Manhattan Bank, New York, N.Y.

Ownership

	Registered Holders	
	Common shares	*Ownership*
Canada	31,554	96.5%
U.S.A.	2,608	2.1%
Other	463	1.4%
	Preferred shares	
Canada	5,983	99.7%
U.S.A.	16	.2%
Other	20	.1%

An English or French edition of this Report may be obtained from the head office of the Company.

On peut se procurer la version française ou anglaise de ce rapport en en faisant la demande au siège social de la compagnie, B.P. 45, Commerce Court West, Toronto, Ontario M5L 1B6.

noranda

Table of Contents

Highlights ($ millions)

	1981	*1980*	*1979*	*1978*	*1977*
Revenue	**3,030.4**	2,889.3	2,484.7	1,691.1	1,395.8
Income and production taxes	**59.4**	242.2	227.0	90.5	22.7
Share of earnings (losses) in Associates	**(1.5)**	83.1	70.1	49.3	33.5
Earnings	**164.8**	408.4	394.5	135.2	71.8
Working Capital	**867.0**	821.5	687.4	281.6	167.3
Long-term debt	**922.3**	580.5	602.5	604.1	588.9
Shareholders' equity	**2,869.4**	2,001.0	1,463.2	884.4	758.7

Total Employment

			1981	*1980*
	Noranda & Subsidiaries	*Associates*	*Totals*	*Totals*
Canada				
Mining & Metallurgy	13,500	4,000	17,500	17,500
Manufacturing	4,900	200	5,100	5,000
Forest Products	4,700	22,800	27,500	19,100
	23,100	27,000	50,100	41,600
International				
Mining & Metallurgy	1,800	6,400	8,200	7,900
Manufacturing	5,300	10,200	15,500	12,200
Forest Products	1,500	4,200	5,700	2,500
	8,600	20,800	29,400	22,600
Totals	31,700	47,800	79,500	64,200

P.O. Box 45, Commerce Court West, Toronto, Canada M5L 1B6

Directors

*Jack L. Cockwell,
Executive Vice-President, Brascan, Toronto
Elected 1981

James C. Dudley,
Chairman, Dudley & Wilkinson, New York
Elected 1970

*J. Trevor Eyton,
President and C.E.O., Brascan, Toronto
Elected 1981

Brian M. Flemming,
Partner in the legal firm of
Stewart, MacKeen & Covert, Halifax
Elected 1981

*William James,
Executive Vice-President, Noranda Mines, Toronto
Elected 1968

*Pierre Lamy,
Economist and Consultant, Montreal
Elected 1981

Paul M. Marshall,
President and C.E.O.,
Westmin Resources, Calgary
Elected 1981

David E. Mitchell,
President, Alberta Energy Company, Calgary
Elected 1973

*André Monast,
Partner in the legal firm of
Letourneau & Stein, Quebec
Elected 1966

Thomas H. McClelland,
Chairman of the Board,
Placer Development, Vancouver
Elected 1975

Donald S. McGiverin,
President and C.E.O.,
Hudson's Bay Company, Toronto
Elected 1980

*W. Darcy McKeough,
President, Union Gas, Cedar Springs
Elected 1979

Fernand Paré
Directeur générale, La Solidarité,
Compagnie d'assurance sur la vie, Quebec
Elected 1981

*Alfred Powis,
Chairman and President, Noranda Mines, Toronto
Elected 1964

Antoine Turmel,
Chairman and C.E.O., Provigo Inc., Montreal
Elected 1981

*William P. Wilder,
President and C.E.O.,
Hiram Walker Resources, Toronto
Elected 1966

Harold M. Wright,
Chairman, Wright Engineers, Vancouver
Elected 1981

*Adam H. Zimmerman,
Executive Vice-President, Noranda Mines, Toronto
Elected 1974

* Member of the Executive Committee

Honorary Directors

J. R. Bradfield, Honorary Chairman
A. O. Dufresne
L. Hébert
A. J. Little
L. G. Lumbers
R. V. Porritt
W. S. Row
J. D. Simpson
L. H. Timmins

Officers

Alfred Powis,
Chairman & President

William James,
Executive Vice-President

Adam H. Zimmerman,
Executive Vice-President

E. K. Cork,
Senior Vice-President — Treasurer

D. H. Ford,
Senior Vice-President — Comptroller

J. A. Hall,
Senior Vice-President — Mines

K. C. Hendrick,
Senior Vice-President — Sales

J. O. Hinds,
Senior Vice-President — Exploration & Development

R. P. Riggin,
Senior Vice-President — Corporate Relations

R. C. Ashenhurst,
Vice-President & Secretary

William Allan,
Vice-President — Mines, B.C.

A. G. Balogh,
Vice-President — Metallurgy

W. J. Barbour,
Vice-President — Investments

B. C. Bone,
Vice-President & Associate Treasurer

G. H. Corlett,
Vice-President — Business Services

J. M. Gordon,
Vice-President — Mines, Central Canada

F. X. Koch,
Vice-President — Engineering & Construction

Camille Marcoux,
Vice-President — Mines, Quebec

B. H. Morrison,
Vice-President — Metallurgy

W. E. Stubbington,
Vice-President — Accounting Services

H. V. Thomson,
Vice-President — Corporate Relations

J. C. White,
Vice-President — Mines

B. H. Grose,
Associate Secretary

L. J. Taylor,
Assistant Secretary

T. E. Phelps,
Assistant Treasurer

L. S. Tigert,
Assistant Treasurer

Chief Officers of Subsidiaries

B. R. Allan,
President,
Noranda Aluminum

J. P. Fisher,
President,
Fraser Inc.

R. L. Henry,
President,
Noranda Metal Industries

R. T. Kenny,
President and C.E.O.,
James Maclaren Industries

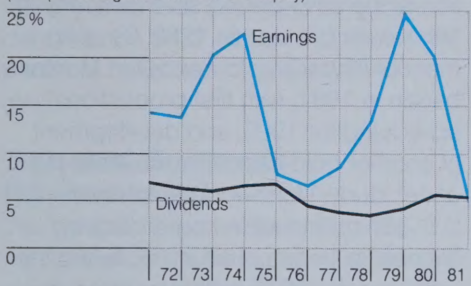
L. E. Londen,
President,
Northwood Mills

J. A. Masters,
President,
Canadian Hunter Exploration

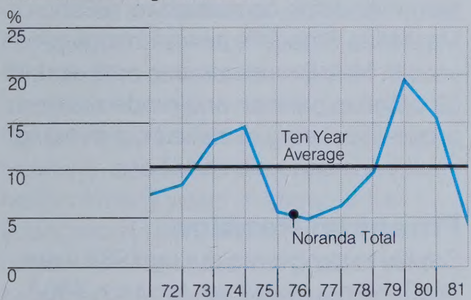
B. T. Ness,
President,
Canada Wire and Cable

Directors' Report to the Shareholders

Earnings and Dividends
(as a percentage of shareholders' equity)



Return on Average net assets



Earnings and Dividends

In what proved to be a very eventful year, earnings of $165 million were less than half the $408 million earned in 1980, and in the absence of gains on sales of investments the comparison would have been considerably worse. Earnings per share from the various divisions were as follows:

Earnings Per Share

From	*1981*	*1980*	*Average 1977-81*
Mining and Metallurgy	$ .15	$2.21	$1.63
Manufacturing	.56	.84	.63
Forest products	.20	.74	.57
Operating earnings	$ .91	$3.79	$2.83
Investment gains	.56	.47	.17
Cost of borrowing*	(.14)	(.20)	(.40)
Primary earnings	$1.33	$4.06	$2.60

*Includes preferred dividends

Dividends of 35¢ per share were paid in each of the four quarters and, for the year, totalled $1.40 per share compared with $1.25 in 1980.

Contrary to expectations, world economic conditions deteriorated steadily throughout the year as restrictive monetary policies and unprecedented interest rate levels aborted the hoped-for economic recovery. By the year end, economic conditions as they affected raw materials producers were worse than at any time since the 1930's. In these circumstances, Noranda's diversification was of little help. While the timing and extent varied, demand and prices for virtually all products of the Noranda group weakened seriously, with constant dollar prices in many cases reaching levels well below those experienced during the post-1974 recession. At the same time, the costs of labour, supplies and particularly energy continued to escalate at rates which exceeded the rate of inflation.

Adding to the impact on Noranda's earnings were strikes and production interruptions during the second half in the B.C. forest industry, at the Horne smelter and at the Tara mine. In addition, weakening metal prices resulted in substantial inventory write-downs, particularly for molybdenum, and earnings were also reduced by the devaluation of the Mexican peso and special write-downs of certain properties due to economic conditions. Together, these factors reduced earnings in the second half by some 95¢ per share. On the other hand, gains on sales of investments (largely British Columbia Forest Products and Texasgulf) totalled $1.23 per share in the second and third quarters.

Quarterly earnings reflected the deteriorating trend through the year. Excluding investment gains, earnings from operations were 60¢ per share during the first quarter and 38¢ per share during the second. From August on, there was an operating loss in each month.

Mining and metallurgical results were the most seriously affected by the combination of declining prices and rising costs. In addition, lower prices resulted in inventory write-downs, and production interruptions also reduced second-half results. Oil and gas exploration write-offs were sharply higher and largely offset a very substantial increase in oil and gas revenues.

In the circumstances, manufacturing results held up reasonably well, as a strong performance by Canada Wire and Cable partly offset a steep decline in earnings from aluminum operations. In forest products as well the picture was mixed. Eastern results were fair as weakness in the newsprint and paper markets only began to be felt late in the year. On the other hand, there was an overall loss on British Columbia operations due to the industry-wide strike during the summer and the disastrous state of the market for wood products.

The geographic breakdown of operating earnings in 1981 and 1980, before

exploration and borrowing costs, was approximately as follows:

	1981	1980
Maritime provinces	15%	9%
Quebec	34	32
Ontario	23	15
Western provinces	11	23
Total Canada	83%	79%
Foreign	17	21
Total	100%	100%

Major Developments

In May, as a result of a tender offer, Noranda acquired a 49% interest in MacMillan Bloedel Ltd. for $694 million, comprising $501 million in convertible preferred shares and $193 million cash. Subsequently, Noranda's 28% interest in British Columbia Forest Products Ltd. was sold for $215 million ($180 million after taxes) giving rise to an after-tax profit of $77 million.

In October, Brascade Resources Inc. (a new company owned 70% by Brascan Ltd. and 30% by the Caisse de dépôt et placement du Québec) completed a tender offer for 10 million common shares at $40 per share in cash and securities and 1.8 million convertible preferred shares at $110 per share. In addition, Brascade Resources purchased 12.5 million Noranda common shares from treasury at $40 to raise $500 million. Together with shares previously owned or subsequently acquired, Brascade Resources now owns some 37% of Noranda's outstanding common shares and 60% of the convertible preferred.

During the year, programs to expand mine production at Brunswick and Bell Copper were completed, as was the program to place the oxide portion of the Lakeshore copper orebody in Arizona back in production. In Quebec, production started at the Gallen orebody, and good progress was made toward placing the Goldstream copper property in B.C. and the Grey Eagle gold orebody in California in production.

Development of the Blackbird cobalt-copper property in Idaho and the various lead-zinc-silver orebodies near Park City, Utah has been slowed down due to market conditions and the accumulated expenditures on the latter have been written-off. The Government of Saskatchewan refused permission to proceed with a planned $73 million expansion of the Central Canada Potash operation, while development of the Hopewell phosphate property in Florida has been stalled by permitting problems. Work continues on the Greens Creek base and precious metals property in Alaska.

Good progress was made on the new roaster and acid plant at Canadian Electrolytic Zinc and the oxygen plant and other facilities at the Horne smelter. The decision was made to proceed with construction of a new 110,000 tons per year zinc reduction plant at Belledune, N.B., to be owned 66% by Brunswick and 34% by Heath Steele. The total capital cost is estimated at $360 million, with first production scheduled for late 1984.

The project to install a third potline at the Noranda Aluminum reduction plant should be completed in 1982 at a cost of $280 million. Canada Wire and Cable's new continuous cast rod mill will also be completed in 1982, and the company has begun a major program to rebuild and rationalize its main plant at Leaside, Ontario. In October, Canada Wire acquired for U.S. $140 million Carol Cables, which operates 10 plants in the United States with annual sales of nearly U.S. $250 million.

Maclaren embarked on a $28 million first-stage modernization of its Masson newsprint mill. Maclaren also acquired significant interests in several woods products companies in its operating area, and expanded its high technology investments through a substantial interest in Norpak Ltd., a company in the forefront of Telidon development. Work was started on the $183 million modernization of Fraser's Atholville pulp mill, and Fraser purchased a paper mill at Thorold, Ontario.

Among associated companies, Placer Development placed the 70%-owned Equity silver mine in British Columbia in production during the year, and production at the 34%-owned silver property in Mexico should start in 1982. Development of Placer's gold deposit in Montana began in 1981, with first production scheduled for 1983, and development of another gold deposit in Australia is under study. Northwood Pulp's new U.S. $37 million waferboard plant in Minnesota began production during the year, and the $375 million program to double the capacity of its Prince George pulp mill will be completed in 1982. MacMillan Bloedel's newsprint operations in New Brunswick was sold, and its $2 billion expansion and modernization program is being stretched out pending improved economic conditions.

Financial Position

Capital expenditures during 1981 were $680 million, in addition to which $862 million was spent on the MacMillan Bloedel and Carol Cables acquisitions. Of the capital expenditures, $133 million were routine expenditures for improved efficiency, environmental control and maintenance of production. The balance of $547 million comprised expenditures on a number of new projects and expansions, the largest items being the Noranda Aluminum expansion and the oil and gas program. Excluding routine expenditures and the Canadian Hunter program, major projects by Noranda and subsidiaries will involve future expenditures of $910 million. In addition, capital expenditures by affiliates totalled $504 million during 1981, and major projects presently underway will involve future expenditures of $564 million.

Of the $500.7 million of convertible preferred shares issued in connection with the MacMillan Bloedel transaction, the holders of $142.3 million exercised their retraction rights in September so that the amount now outstanding is $358.4 million. On the other hand, $500 million of new equity capital was received in October as a result of the Brascade Resources transaction. As a result, despite a poor earnings performance and heavy capital spending, Noranda's financial position remained satisfactory.

Net working capital increased by $46 million, while total short and long-term debt rose by $432 million. Net worth, on the other hand, rose by nearly $900 million.

General Business Environment

The belated determination of governments to mount a serious and sustained attack on the debilitating disease of inflation is encouraging, although opinion is divided as to whether all of the remedies being applied are appropriate. Unless this attack succeeds, there will be little chance to achieve economic stability, rising living standards and social justice. However, current inflation levels are the result of many years of abuse of the economic system, and there is no reason to believe that the problem can be solved quickly or painlessly.

For producers of basic commodities, the trauma is particularly severe. The worst previous post-war recession, in 1975-77, produced extreme price weakness and depressed earnings and seriously eroded the industry's financial condition. Today, however, conditions are even worse, with the prices of the most important products of the Noranda group being from 67% to 95% of 1976 levels in constant Canadian dollars.

Equally devastating has been the increase in costs, which have risen much more rapidly than the rate of inflation. For typical Noranda group operations, hourly wages have risen an average of 10% in constant dollars since 1976, while the cost of energy and operating supplies has risen by 69% and 19% respectively. The overall cost of the various inputs since 1976 has risen by an average of 23% in constant dollars, while actual unit costs rose by 10%. The difference, of course, reflects improved productivity — the result of both routine and major projects to improve efficiency.

These projects have involved substantial capital expenditures, but the only results at the moment are financial results that are not as bad as they otherwise would have been. The unalterable fact is that, with prices in real terms lower and costs higher than during the worst previous post-war recession, reasonable profits are impossible to achieve.

Directors

As part of the arrangement with Brascade Resources, the number of directors was increased to 18 and seven of their nominees were elected to the Board in November: Jack L. Cockwell of Toronto, Executive Vice-President of Brascan Ltd.; J. Trevor Eyton of Toronto, President of Brascan Ltd.; Brian M. Flemming of Halifax, partner in the legal firm of Stewart, MacKeen & Covert; Pierre Lamy of Montreal, economist and consultant; Paul M. Marshall of Calgary, President of Westmin Resources; Fernand Paré of Quebec, directeur générale of La Solidarité, Compagnie d'assurance sur la vie; and Harold M. Wright of Vancouver, Chairman of Wright Engineers.

Also in November, Leonard G. Lumbers retired from the Board. The Directors record their great appreciation for the substantial contributions made by Mr. Lumbers during his 52 years of association with Noranda, the last 19 as a member of the Board, and are pleased that he has agreed to continue this association as an Honorary Director.

Outlook

Last year's Annual Report was prepared in the midst of a severe recession, and forecast a stagnant or declining earnings performance by Noranda in 1981. However, the report stated that if the expected economic recovery did begin towards the end of the year, it could quickly result in shortages and higher prices and that 1982 could be a very good year. Instead, of course, economic conditions have become very much worse, and previous hopes for 1982 have been dashed.

Only a sustained economic recovery will produce more reasonable prices for basic commodities, and there is no prospect that this will happen during the first half of 1982. There is a consensus that a recovery will begin during the second half, but there is some doubt as to whether it can be either strong or sustained in the face of highly restrictive monetary policies. On balance, therefore, it appears that 1982 will be a poor year for the world economies in general and for Noranda in particular.

However, it remains true that there is inadequate capacity to supply the world's requirements for many commodities under reasonable economic conditions. Evidence of this is the fact that massive surplus inventories (with some exceptions) have not accumulated despite the current depressed level of demand. New capacity has not been added because prices for some years have been too low to justify any but exceptional new developments, and because of the difficulty of financing major new projects with long lead times in an inflationary environment. This argues that prices should respond fairly quickly to a sustained economic recovery when it occurs.

In the meanwhile, Noranda's financial condition remains satisfactory despite depressed earnings and heavy capital spending. While caution will be required to ensure that this strength is not unduly eroded, it should permit maintenance of a degree of momentum during the present depressed economic conditions. The various projects recently completed and presently underway should contribute substantially to the growth in Noranda's earnings when economic conditions finally improve.

It is easy for management and employees to look good when demand is strong and prices are high, but the real test of effectiveness comes in difficult times. This test is being met and the Directors wish to express their appreciation for the loyal and dedicated efforts of employees at all levels throughout the Noranda group.

On behalf of the Board,

Alfred Powis

Chairman and President.

Toronto, Canada
February 26, 1982


Exploration

Oil and Gas

Canadian Hunter Joint Venture (75%)

Financial

$ millions	*1981*	*1980*
Noranda's Share		
Sales	84.2	18.1
Operating profit	34.8	8.1
Average net assets employed	234.3	185.3

Gas production rose by 334% over the prior year as a result of substantial increases in the recognized reserves within the Elmworth and the Wapiti contract areas. Production was limited to about 70% of contract rates throughout the industry as a result of low export volumes. Hunter is now one of the top 20 gas producers in Canada.

The gas processing facilities at Elmworth and Wapiti demonstrated capabilities of 300 million cubic feet (MMcf) per day and 85 MMcf per day respectively. Each of these facilities will be expanded by 50% during 1982 in anticipation of higher contract rates resulting from late 1982 reserve redeterminations. When the Elmworth expansion is completed, this plant will be Alberta's largest sales gas processing facility at 450 MMcf per day.

The Karr gas plant, 40 miles south of Grande Prairie, was brought into production in November. This plant has a capability of 40 MMcf per day (Noranda's share is 8 MMcf per day) and produces to both Sulpetro and Pan Alberta export contracts.

A new plant and gathering system with a capability of 200 MMcf per day is now under construction in the South Wapiti area. This facility will be completed by November 1, 1982 to produce to the existing Wapiti contract and the export contracts of our partner, Pan Alberta. (Noranda's share is 45 MMcf per day.)

By year-end 1982, the contracted process capability and delivery system capacity from the Deep Basin will be in excess of 1,000 MMcf per day (Noranda's share 270 MMcf per day).

Land acquisition at Alberta and British Columbia Crown sales totalled 28,240 net acres compared to 30,370 a year earlier. Hunter's land position at year-end was:

	Gross Acres	*Net Acres*
Leases	1,739,900	928,000
Reservations, Licences and Permits*	7,667,400	6,095,400
Total	9,407,300	7,023,400

*Includes 6,441,400 (5,314,200 net) acres in Nechako Basin, British Columbia.

Canadian Hunter participated in the drilling of 60 exploratory and development wells, resulting in three oil and 43 gas wells, a success ratio of 77%.

Exploration activity in Western Canada was off sharply due to the poor prospects for early gas markets and the substantially higher taxation imposed on hydrocarbon production. The company's exploratory program was primarily limited to the Deep Basin area of Alberta and British Columbia. In the Nechako Basin of the central interior of British Columbia, geophysical surveys were completed. To date, three dry holes have been drilled and a fourth test is currently drilling on these extensive holdings.

Noranda's share of reserves at year-end (before royalty interest) is as follows:

	Oil and Natural Gas Liquids (millions of barrels)	*Marketable Natural Gas (billions of cubic feet)*
Proven	3.6	793
Probable	2.7	527
Proven and Probable	6.3	1320
Established	4.6	972

Proven reserves are volumes that are considered recoverable with a high degree of certainty under anticipated operating and economic conditions. Proven reserves may be assigned to both developed and undeveloped lands.

Probable reserves are volumes that may be recovered from lands in the vicinity of proven reserves but where there is some degree of geological, engineering, operational or economic risk.

Established reserves are those reserves recoverable under current technology and present and anticipated economic conditions, specifically proven by drilling, testing or production, plus that judgment portion of contiguous recoverable probable reserves that are interpreted to exist with reasonable certainty from geological, geophysical or similar subsurface information.

Total 1981 expenditures for Canadian Hunter joint venture participants were as follows:

	Land Acquisition & Exploration	*Oil & Gas Development*	*Total*
		($ millions)	
Noranda	26.1	31.2	57.3
Petromark	4.3	6.9	11.2
Agnew	3.9	4.7	8.6
Domtar	1.3	1.6	2.9
Total	35.6	44.4	80.0

Noranda's gross investment since 1973 has been $331 million. Its share of income from production operations over the period has been $102 million, with a resulting net investment at the end of 1981 of $229 million.

American Hunter (75%)

Joint venture exploration in the United States was focussed on identifying and buying petroleum rights in significant geological plays. The land position at year-end was:

	Gross Acres	*Net Acres*
Fee	1,826,296	820,693
Federal	204,065	163,008
Total	2,030,361	983,701

The year 1982 will see drilling and evaluations of at least five major plays where sufficient land has been assembled to warrant drilling.

American Hunter participated in the drilling of 46 wells, resulting in 24 oil wells, three gas wells and 19 abandonments. At year-end, the net daily joint venture production amounted to 555 barrels of oil and 0.3 million cubic feet of sales gas.

Total 1981 expenditures for American Hunter joint venture participants were as follows:

	Land Acquisition & Exploration	*Oil & Gas Development*	*Total*
		($ millions)	
American Hunter (75%)	51.7	2.6	54.3
Keradamex Inc. (11.25%)	7.9	0.4	8.3
Bluesky (10%)	7.0	0.3	7.3
Domtar Inc. (3.75%)	2.6	0.1	2.7
Total	69.2	3.4	72.6

Noranda's gross investment to date has been U.S. $66.2 million. Income from production operations has been U.S. $2.2 million. The resulting net investment at end of 1981 amounted to U.S. $64.0 million.

Panarctic Oils (3.78%)

The company operated and held a minor working interest position in three potentially significant oil and gas discoveries at Cisco, MacLean and Skate. These offshore wells were located in the vicinity of Lougheed Island in the western Arctic. One well was drilled and abandoned onshore at Bent Horn.

There was no additional financing subscription made during the year and the Noranda investment remains at $10.1 million.

Minerals

Noranda Exploration, with its head office in Toronto, operates from 25 field offices of which 13 are in Canada.

Exploration and development expenditures in 1981 were $43.5 million. Of this total, 50% was spent in Canada, 38% in the U.S.A. and 12% in other countries.

In Canada, active field projects were carried out for base and precious metals, cobalt, tungsten, potash and uranium. Of total exploration expenditures, 19% was spent on reconnaissance surveys, 31% on target selection and definition and 50% on diamond drilling.

In Atlantic Canada, exploration was continued for base and precious metals, tin, tungsten and potash. No significant mineralization was encountered. A program to drill test a number of favourable geological contacts for copper-zinc deposits was continued in the Noranda area of Quebec. Drilling was carried out on wholly owned property and in joint ventures with other companies and although no new ore zones were located, results have been sufficiently encouraging to continue these programs. Also in Quebec, at Matagami, progress was made on extensive geophysical surveys and diamond drilling on wholly owned properties and in joint venture with other companies. In addition, exploratory drilling was carried out from underground in an effort to locate new reserves. Encouraging mineralization was encountered at three locations. Reconnaissance programs were carried out at several locations in northwestern Quebec, resulting in the acquisition of numerous claims on which follow-up work is in progress.

In Ontario and Manitoba, ground follow-up geological and geophysical surveys were carried out on claims acquired as a result of reconnaissance surveys. Test target drilling has begun. A geological assessment and initial diamond drilling on a number of gold properties near Red Lake and Timmins, Ontario produced results sufficiently encouraging to warrant further work.

Drilling was continued in Saskatchewan on several uranium properties.

Significant uranium mineralization was encountered at Eagle Point, Collins Bay on a property held in joint-venture with Saskatchewan Mining Development Corporation (33⅓%) and Gulf Minerals Canada Limited (33⅓%). Of 149 holes drilled by the operator, Gulf Minerals, 64 intersected ore grade mineralization which extends for a length of 520 meters. The mineralization is complex but a significant geological reserve of U_3O_8 has been indicated. Further drilling will be required to assess the economic viability of the deposit.

Reconnaissance and property exploration in the Northwest Territories located two new base metal prospects on which further work is warranted. In addition, encouraging base metal mineralization was encountered in five of eight holes drilled on a property at Olga Lake in which Noranda has a 40% interest. Exploration was continued on three uranium properties in joint venture with other companies.

Preliminary sampling of a placer gold prospect was undertaken in the Yukon. Encouraging results were obtained from exploration on a tungsten property but additional work is required to assess the economic potential of the property. Ongoing exploration programs for base and precious metals were continued in British Columbia with no significant results.

In the U.S.A., reconnaissance and detailed exploration programs were carried out in the Western states and Alaska for base and precious metals. Results on two gold prospects in Alaska and Nevada are sufficiently encouraging to warrant further work. Exploratory drilling was continued in the Blackbird district, Idaho for cobalt, at Ontario, Utah for silver-lead and at Lakeshore, Arizona for copper. At Goldfield, Nevada exploration was continued on a low-grade gold prospect in which Noranda has a 50% interest.

Exploration in Australia focused on base and precious metals. Five projects were drill tested with inconclusive results. Various properties of merit were examined in South America. In Ireland, exploration continued in permit areas and additional drilling was carried out at Harberton Bridge.

Mattagami Lake Exploration

This wholly owned, independent exploration company continued to search for viable mineral deposits with $3.0 million spent on exploration and a further $2.9 million on projects requiring more detailed evaluation. In Canada, 46 projects were active, four of which encountered encouraging mineralization and will require further investigation. Activity in the Sturgeon Lake area of northwestern Ontario, where Mattagami has extensive land holdings, accounted for a major portion of the expenditures.

In Spain, Mattagami continued to participate in the Iberian Exploration Syndicate's program on numerous permit areas and limited production for testing purposes was carried out on the Rosalejo property.

Markets

Generally, prices in 1981 continued the downward trend that commenced after the abnormal surge in the first quarter of 1980. Inflation remained stubbornly high despite record unemployment and escalating interest rates which discouraged consumption and investment. By year-end, shipments and prices were both sagging, while inventories, which had been kept in check by strikes and curtailments, were rising. The anticipated advance in prices was once again one year away.

Noranda Sales

Noranda Sales is responsible for the metal and mineral marketing and sales activities and commodity trading for Noranda's mining and metallurgical operations and those of several other mining companies. The head office in Toronto is active in North and South America and the Pacific while Noranda Sales Corporation of Canada Limited in England operates in the European Economic Community, the East bloc, the Middle East and Africa.

Physical trading is carried on by Canadian American Metal Company of New York in which Noranda has a 65% interest. Commodity broking is done through Rudolf Wolff and Company in London and its subsidiary in New York City. In 1981 a 45% joint venture metal marketing and trading company, Elnor Comercio e Representacoes Ltda., was established in Sao Paulo, Brazil, with Noranda's Brazilian partner Eluma S.A., and coal trading was commenced by Norcoal Company, a 70% joint venture located in Charleston, West Virginia.

Noranda Sales manages Canad Holdings (Jersey) Limited and Canad Trading (Jersey) Limited, as well as Noranda's 50% interest in Nutrite Inc., a Canadian fertilizer distribution company and its U.S. subsidiary Nutrite Corp.

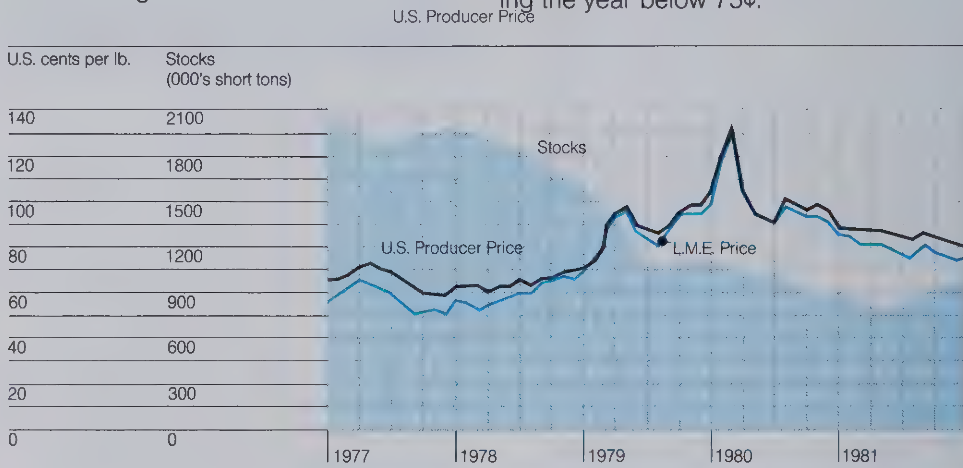
Copper

Western World Balance

'000 Short Tons	*1979*	*1980*	*1981*
Supply	7,798	7,820	7,937
Consumption	8,292	8,016	7,836
Year-end stocks	1,108	912	1,013

The early improvement in industrial production faded as most western economies followed the United States into recession. The bellweather automotive and housing industries remained depressed and refined copper consumption fell for the second consecutive year. Producer cutbacks at several North American operations helped check the rise in industry stocks which was held to only 100,000 tons.

London Metal Exchange quotations peaked at U.S. 88¢ per pound in the early days of January and then faded to levels below costs for many mines, finishing the year below 75¢.



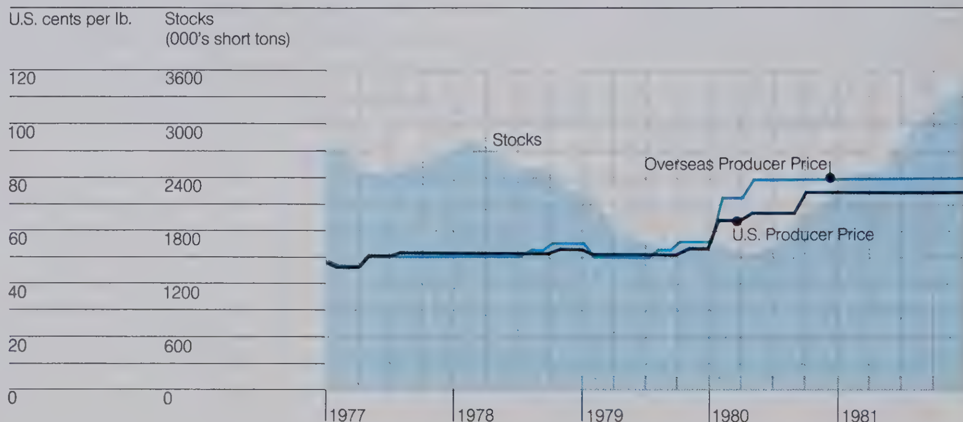
Aluminum

World Balance

'000 Short Tons	*1979*	*1980*	*1981*
Supply	13,261	14,085	13,741
Consumption	13,581	13,523	12,677
Stocks	1,743	2,305	3,369

Record U.S. interest rates in the first half led to reduced economic activity in all aluminum-consuming areas — particularly the key transportation and construction sectors. A similar pattern developed in non-U.S. markets during the second half.

Although U.S. producers led the way in closing production lines, inventories still rose significantly during the year. The overseas producer price remained at 79.4¢ per pound but spot prices plummeted to much lower levels.

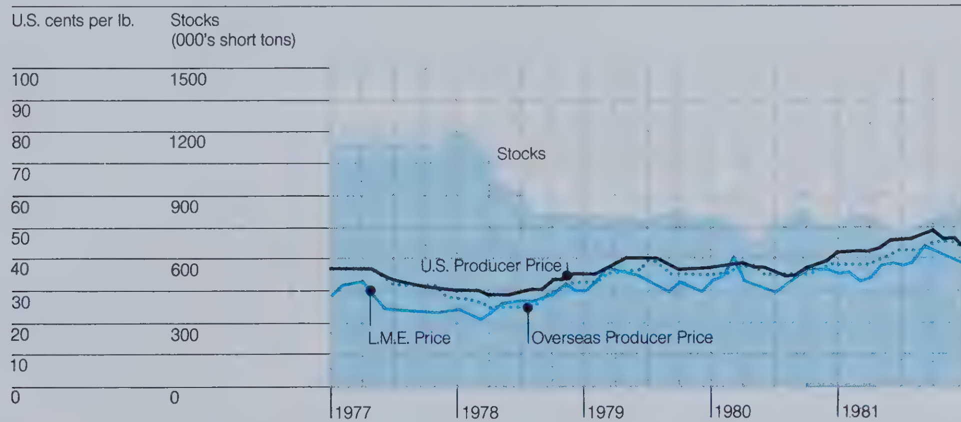


Zinc

Western World Balance *'000 Short Tons*	*1979*	*1980*	*1981*
Supply	5,138	4,939	4,937
Consumption	5,229	4,942	4,845
Year-end stocks	790	787	879

Throughout the year, the overriding preoccupation of the industry was the shortage of mine concentrate relative to smelter capacity. This was compounded by the series of strikes which occurred in Australia, Peru, Mexico and Ireland. Thus the situation was one of market strength until consumption eased in the fourth quarter and inventories increased.

Prices in the United States rose in several steps from U.S. 41¼¢ per pound to 49¼¢ but fell back to 42-43¢ at year end. Overseas, the pattern was similar, moving first from U.S. $825 per metric ton to $1,000 and then to $950.

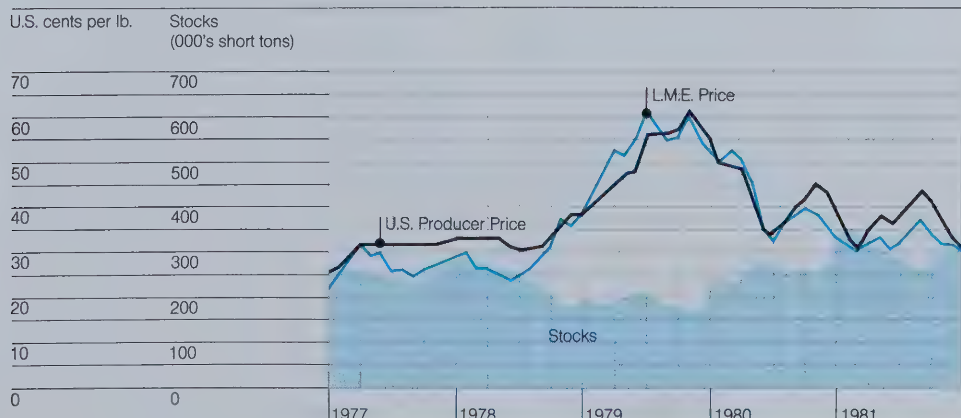


Lead

Western World Balance *'000 Short Tons*	*1979*	*1980*	*1981*
Supply	4,610	4,435	4,235
Consumption	4,575	4,330	4,235
Year-end stocks	220	325	325

Generally weak demand for lead throughout 1981 was offset by long strikes in the United States and Ireland. In addition, prices fell to levels which discouraged secondary production. While stocks were steady, there was a shift to Europe in the last quarter which could overhang that sensitive market in 1982 if exports to the Eastern bloc remain low.

Prices in the U.S.A. moved from U.S. 32¢ per pound to 44¢ and down to 32¢ per pound. Overseas, the London Metal Exchange quotations were about 3¢ lower.



Gold

Western World Balance '000,000 Troy Ounces	1979	1980	1981
Supply	56.7	25.8	36.7
Industrial consumption	46.3	24.0	28.5
Surplus	10.4	1.8	8.2

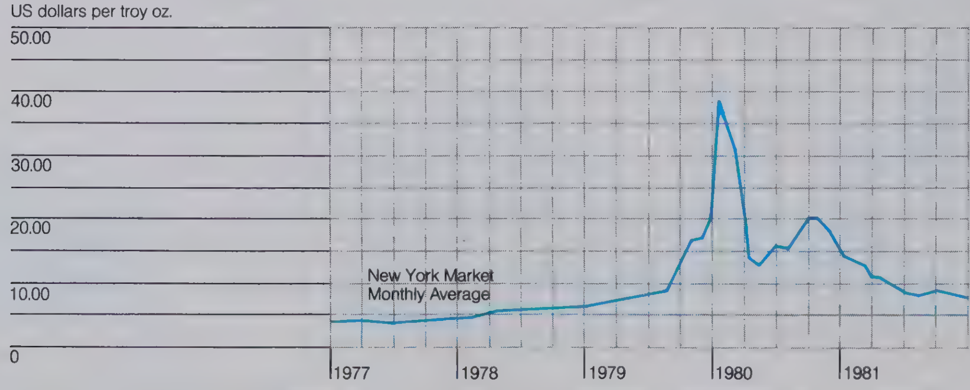
Gold prices moved steadily lower through the year from U.S. $600 per ounce to $400. High interest rates and U.S. Dollar strength progressively reduced interest in gold as an investment while the preoccupation with anti-inflation measures virtually eliminated gold's sensitivity to geopolitical events such as the threat of conflict in Poland.

The speculative excesses in early 1980 had a significant and lasting effect on consumption, particularly jewellery, which has reduced industrial demand. More recently, Russian and South African sales for balance of payments reasons have added to the downward pressure on prices.

Silver

Western World Balance '000,000 Troy Ounces	1979	1980	1981
Supply —			
Primary	261	269	270
Secondary	132	270	150
U.S. Stockpile	—	—	2
	393	539	422
Consumption	433	380	390
Surplus	(40)	159	32

While frequently following the price trend of gold, silver reacts more as an industrial commodity than a monetary metal. The extremely high prices two years ago attracted exceptional quantities of secondary silver for reprocessing which now burden the market. Investment in new mine production was also encouraged by the high prices while consumption was adversely affected as fabricators used less and looked for substitutes. With the current surplus forecast to continue, prices were halved in 1981 from U.S. $16 per ounce to $8.



Molybdenum

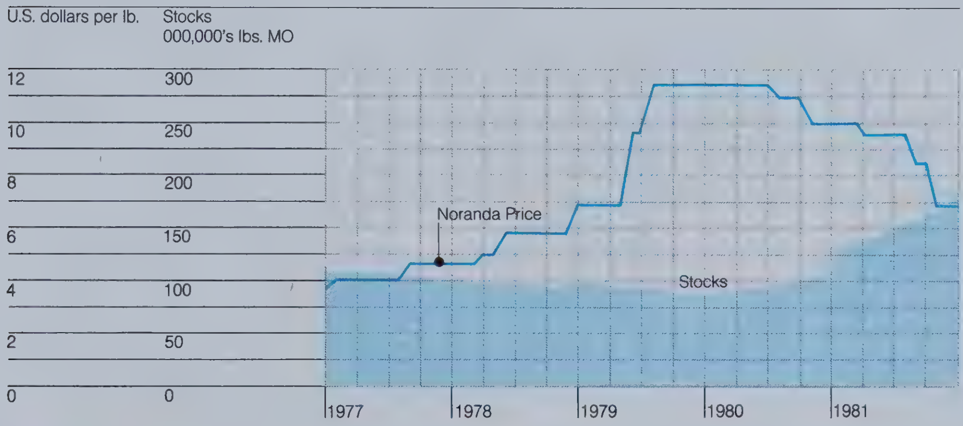
Western World Balance

'000,000 lbs.	*1979*	*1980*	*1981*
Supply	200	211	212
Consumption	204	177	162
Stocks	94	128	178

Market conditions progressively deteriorated throughout 1981 as the world alloy steel industry, molybdenum's principal market, operated at 55-65% of capacity.

Despite the rapid inventory build-up and high interest rates, producers were slow to reduce output. Stocks will remain high for several years as the start-up of new mines will tend to offset the effect of the production cutbacks.

Producer prices were reduced three times from U.S. $10.10 to $6.90 per pound for molybdenum in oxide while merchant quotations were consistently lower through the year.



Phosphates

World Balance

'000 Short Tons P_2O_5

Year Ended June 30	*1979*	*1980*	*1981*
Production	35,996	36,872	37,048
Consumption	34,376	34,260	35,626
Difference	1,620	2,612	1,422

World phosphate fertilizer consumption for the 1981 fertilizer year was 4% below forecast due to bad weather in the U.S.A. in the spring, high interest rates which affected both European and North American consumers and the strengthening of the U.S. dollar. Prices fell from U.S. $205 per metric ton to $165-$170 despite cutbacks of up to 25% by major U.S. and European producers. By year-end, there was some recovery with prices back to $195-$200.

Potash

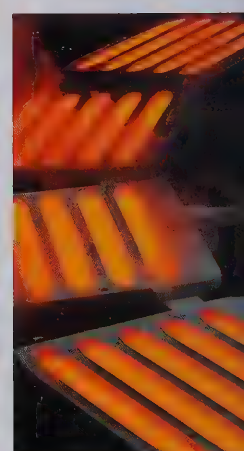
World Balance

'000 Short Tons K_2O

Year Ended June 30	*1979*	*1980*	*1981*
Supply	28,660	28,246	30,865
Demand	27,920	28,396	30,997
Difference	740	(150)	(132)

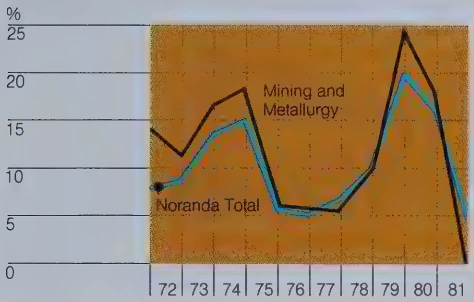
The world market for potash was well balanced through the fertilizer year, as strong offshore demand more than compensated for weakness in North America. However, with the spread of the U.S. recession, this demand fell resulting in higher stocks as the year progressed.

Prices ranged between U.S. $1.20 and $1.25 per K_2O unit for coarse grade but were weakening at year-end.



Mining and Metallurgy

Return on average net assets



Total Financial

$ millions	*1981*	*1980*
100% Basis		
Sales	1,766.7	2,071.2
Average net assets employed	2,461.3	2,109.8
Noranda's Share		
Sales	1,382.2	1,623.1
Operating profit	47.4	244.5
Average net assets employed	1,481.1	1,358.4

The continued decline in world economic conditions caused lower prices and reduced demand for base and precious metals, which severely affected the mining and metallurgical results for 1981. Prices for copper, molybdenum and precious metals continued to decline throughout the year. Zinc prices followed an upward trend for the first three quarters and tailed off at year-end; lead prices peaked at mid-year and fell off in the second half of 1981. The Canadian exchange rate remained favourable to the U.S. Dollar.

The general reduction in metal prices throughout the year resulted in progressively lower earnings or increased losses which were exacerbated by inventory writedowns. Noranda's earnings flipped from a profit of $30 million in the first quarter to a loss of $30 million in the fourth. After-tax inventory writedowns amounted to $34 million for the year, of which $13 million was in the fourth quarter. Total sales for the mining and metallurgical group were $1,746 million, compared to $2,071 million in 1980. Operating profit was $47.4 million as against $244.5 million in 1980. Exploration write-offs eliminated the 1981 operating profit.

Contributing factors in the lower operating profit were work stoppages at the Horne smelter and at Tara, continuing cutbacks for environmental reasons at the Horne smelter, and lower production rates at Mattabi and Gaspé. At several mines, escalating costs coupled with lower metal prices forced a downward revision of mineral inventories.

Ore treated by the mining and metallurgical group and associates totalled 92.2 million tons, some 5% above the 1980 level.

The table of mine output overleaf lists this production by operation. It may be of interest to note that a 1¢ per lb. change in the price for copper affects Noranda's bottom line by more than two million dollars, and for zinc by some five million dollars annually. A 10 percent increase in the current prices of these two metals would generate nearly $35 million additional earnings. Obviously the Noranda Group is in a strong position to benefit from an upsurge in the economy.

While recession clouded most of the metal markets, zinc provided the mining and metallurgical group with brighter prospects. Metal production at Canadian Electrolytic Zinc was close to capacity and construction is underway on a third roaster-acid plant which is scheduled to start up in early 1983. In November, Brunswick Mining and Smelting and Heath Steele Mines announced a joint venture participation (66% Brunswick) in the development of a 110,000 tons per year zinc reduction plant at Belledune, N.B., with scheduled start-up for late 1984. Together with existing refining capacity, the new $360 million plant will make the Noranda Group a leading world producer of zinc metal.

Mine production of zinc in concentrate was 584,780 tons, down slightly from the previous year. The open pit at Mattabi

Operations

Legend

Cu	copper	**Mo**	molybdenum
Zn	zinc	**Hg**	mercury
Pb	lead	**K_2O**	potassium oxide
Ag	silver	**o.p.t.**	ounces per ton
Au	gold		

was depleted in the last quarter. Mining began in 1971 and over nine million tons of pit ore were milled, generating $103 million in dividends. Production will be at a lower rate of 1,000 tons per day until the new $26 million underground shaft expansion is ready. Additional ore requirements for the concentrator will be supplied by the Lyon Lake and "F" Group mines. The strike at Tara Mines in Ireland which began in July was settled in February 1982.

Mine production of copper in concentrate was 250,000 tons, about 10% more than the previous year. Geco Division was a highlight with copper output increasing 25% over 1980 while output at Mines Gaspé was lower due to lower ore grades and higher stripping ratios and, in conjunction with falling copper prices, the milling of Copper Mountain ore at No. 1 concentrator was curtailed at the end of the year. The mine and concentrator expansion to 17,000 tons per day at the Bell Mine was completed early in the year.

Copper throughput was reduced by 10% at the Horne smelter, mainly due to cutbacks necessitated by weather conditions in order to control ground level concentration of SO_2. The construction of a 500 tons per day oxygen plant at the Horne smelter is continuing on schedule and under budget and start-up is expected in late 1982. Throughput of refined copper at the CCR Division was below 1980 levels because of lower anodes supply.

In September, Noranda concluded negotiations to acquire 37% of Eluma, S.A. of Sao Paulo, Brazil over four years. Through its corporate relationship with Eluma, Noranda now has an entry into the Brazilian mining and smelting sectors via an established Brazilian corporation.

Copper Group

$ Millions	*1981*	*1980*
Sales	452.6	607.9
Operating profit	22.8	121.4
Average net assets employed	408.8	412.5

Horne Division

Smelter Production – Tons (000)

	Materials Smelted (Excludes Flux) Noranda	Materials Smelted (Excludes Flux) Custom	Cu Content of Anodes Produced
1981	221	658	214
1980	183	741	221
1979	158	799	232

Operations at the Horne Smelter are curtailed on a regular basis to control ambient levels of sulphur dioxide. These intermittent cutbacks were particularly severe during 1981 as a result of unusual weather conditions. In addition to a direct loss of 95,000 tons in smelting capacity, the frequent interruptions upset metallurgical controls in the converter aisle leading to indirect production losses.

Receipts of concentrates, scrap and secondaries were up 54,000 tons over the preceding year. The plant was shut down for one week during a legal strike. A three year collective bargaining agreement was signed on September 1.

Major revisions were made to the concentrator to permit the operation of a third circuit on custom zinc ores. Start-up was underway at year-end. A semi-autogenous slag grinding mill was also brought on stream during the fourth quarter. The Chadbourne circuit treated 240,000 tons of gold ore and an additional 16,000 tons were used as smelter flux.

Improvements in working conditions are the objectives of an ongoing program at the smelter. In this connection, three converting furnaces have been equipped with Noranda designed hoods which effectively reduce sulphur dioxide spill gas emissions. Site preparation and foundations for the $35 million project are complete. Atmospheric dust emissions are expected to be reduced significantly when the new facilities are brought on stream.

An extensive statistical examination of mortality rates of former smelter employees has shown that there does not seem to be a cause/effect relationship between an increased risk of total mortality or mortality caused by lung cancer and exposure to copper, lead, arsenic and cadmium at the smelter. An outline of the study, which was carried out by the Institut Armand-Frappier, has been made public.

Extensive research on acid rain in north west Quebec commenced in 1977. The results of the study show that the contribution of the Horne Smelter to acidity of precipitation in northwest Quebec is not significant. The study also indicates that lakes in the study area are not acidic. The research continues.

Geco Division

Tons milled and ore grade, with the exception of silver, exceeded plan as pillar mining proceeded on schedule. Metallurgical results in the mill reflected modifications made to the process circuits to increase metal recoveries and concentrate grades.

Training programs, including modular training, helped to alleviate the continuing shortage of experienced miners and helped reduce turnover.

A four hole surface diamond drilling exploratory program north of the property to investigate mine series rocks at a depth of some 4,700 feet was completed without significant mineralization being encountered.

Division Mines Gaspé

Smelting Tons *(000)*

	Concentrates Gaspé	Concentrates Custom	Production Cu	Production Acid
1981	192	108	71	110
1980	207	86	69	149
1979	110	55	38	71

Volume of ore treated was limited by rock support problems in the underground B and C Zones and delays in waste stripping at Copper Mountain pit. In response to losses incurred by declining metal prices, milling of Copper

Production Summary – operating mines

	1980	1981							
	Ore Treated (000 tons)	*Ore Treated (000 tons)*	*Copper (tons)*	*Zinc (tons)*	*Lead (tons)*	*Silver (000 oz)*	*Gold (oz)*	*Molybdenum (000 lbs)*	*Muriate of Potash (000 tons)*
Noranda Divisions									
Copper Group									
Geco	1,497	**1,466**	25,000	38,800	180	1,386	—	—	—
Gaspé	11,272	**11,156**	42,078	—	—	—	—	1,937	—
Babine — Bell	5,525	**5,985**	23,786	—	—	—	31,259	—	—
— Granisle	4,339	**4,225**	12,962	—	—	104	9,148	—	—
Zinc Group									
Matagami	1,464	**1,327**	7,570	56,600	—	194	5,198	—	—
Mattabi	843	**521**	845	26,960	1,020	753	—	—	—
Lyon Lake	92	**359**	2,490	21,350	600	1,053	—	—	—
F Group	—	**108**	150	7,550	285	127	—	—	—
Heath Steele	1,380	**1,378**	7,464	40,708	8,460	957	—	—	—
Other Mining									
Boss Mountain	533	**468**	—	—	—	—	—	1,997	—
Camlaren	12	**40**	—	—	—	5	16,168	—	—
Central Canada Potash	3,752	**3,406**	—	—	—	—	—	—	1,327
Chadbourne	283	**255**	—	—	—	14	21,177	—	—
Les Mines Gallen	—	**38**	—	530	—	9	392	—	—
Noranda Lakeshore	—	**1,767**	13,035	—	—	—	—	—	—
Northland Gold	—	**—**	—	—	—	—	2,112	—	—
Major Subsidiaries and Associates									
Brenda	10,061	**11,243**	12,598	—	—	—	—	5,936	—
Brunswick	2,037	**3,765**	5,177	259,700	87,900	6,293	—	—	—
Craigmont	2,151	**1,536**	9,974	—	—	—	—	—	—
*Kerr Addison	834	**882**	—	27,200	14,400	—	51,500	—	—
Pamour	1,826	**1,758**	1,725	—	—	45	103,230	—	—
**Placer	38,071	**39,311**	85,100	—	—	7,321	—	11,760	—
Tara	2,353	**1,180**	—	105,380	18,035	—	—	—	—
Totals (100%)	88,325	**92,174**	249,954	584,778	130,880	18,261	240,184	21,630	1,327
Noranda's direct interest		**51,330**	**161,680**	**384,850**	**75,300**	**9,770**	**148,000**	**10,836**	**1,327**

*Includes Mogul of Ireland. ** Includes: Endako, Equity, Gibraltar, Marcopper.

Summary of Smelting and Refining Production

	Copper (tons)	*Zinc (tons)*	*Lead (tons)*	*Silver (000 oz)*	*Gold (oz)*	*Cadmium (lbs)*	*Sulphuric Acid (tons)*
Noranda Divisions							
— Horne	214,000	—	—	—	—	—	—
— Mines Gaspé	71,000	—	—	—	—	—	110,000
— CCR	396,000	—	—	18,966	465,000	—	—
Brunswick	—	—	52,700	3,021	—	—	175,500
Canadian Electrolytic Zinc	—	224,700	—	—	—	709,200	284,800

Mountain ore was discontinued at No. 1 concentrator at the end of the fourth quarter and the workforce reduced. Molybdenum concentrate production contained 1,937,000 pounds of molybdenum metal.

Smelter operations improved in the second half of the year when mechanical problems were resolved. Design faults and difficult operating conditions continued to limit sulphur recovery in the acid plant.

There were numerous metallurgical and mechanical difficulties when operations resumed at the oxide treatment plant. At year-end the plant was operating at 50% of planned throughput.

Adjustments were made to the mineral inventory by increasing the cut-off grades to reflect escalating costs and declining metal prices. Exploration drilling from surface confirmed the presence of a mineralized zone under the Town of Murdochville. Underground development was advanced to this area in preparation for detailed diamond drilling.

Babine Division

Bell Mine

Ore deliveries, although higher in grade, were slightly below target due to restrictions caused by insufficient waste removal in the past. This was helped by transferring additional mining equipment from the Granisle Mine during the summer. The concentrator expansion was completed early in the year and some start-up difficulties were experienced with the new sand/slimes flotation circuit. However, production and copper recoveries improved in the second half to establish a record average 16,397 tons milled per day, 9% above the 1980 level.

In spite of a 28% increase in copper concentrate production, net revenue was nearly 2% lower than last year, reflecting the severe drop in prices for copper and gold. Operating costs rose 38% at the higher mining rate to compound further the squeeze on profit margins. A revised mining plan designed to meet current economic conditions resulted in a smaller pit. This will reduce the quantity of waste rock but leave some potential ore in the walls.

Turnover of employees remained high with a continuing shortage of tradespeople. Safety performance was slightly better than the norm for mines in B.C.

Granisle Mine

This operation became a casualty of the recession mainly due to low copper prices. The throughput in the mill was slightly below that in 1980 because of a 10-day shutdown to install the new screening plant and to complete extensive modifications in the concentrator. Production of copper, gold and silver was lower due to the drop in head grade and lower copper recovery. At mid-year, the decision was taken to decrease the mining rate (waste and ore) from 43,000 to 28,000 tons per day. This revision reduced the waste stripping by 14.8 million tons, but it also reduced the mineral inventory by 8.75 million tons.

Turnover lessened slightly over the year, and the safety record was one of the best in the industry.

CCR Division

Refined Metal Production

	Copper (tons 000)	*Silver (oz. 000)*	*Gold (oz. 000)*
1981	396	18,966	465
1980	410	22,055	475
1979	363	20,648	410

Refined copper and silver production was reduced by low receipts from the Horne Division. However, this shortfall in copper was partially offset by purchases of 14,500 tons of unrefined copper from other than regular sources.

The $4 million extension to the scrap department to increase capacity to receive secondary copper by 50% to 36,000 tons a year was virtually completed by the year-end.

There was a marked swing during 1981 from wire bars for conventional rod mills to cathodes for continuous rod production. Wire bar shipments decreased by 26% to 215,800 tons while cathode shipments increased by 68% to 153,600 tons.

The initial phase of modernization of plant facilities was completed with successful commissioning of a prototype unit to mechanize handling of spent anodes. This is part of a major program to upgrade materials handling and adjust to the increasing tonnages of cathodes being shipped. At the same time, projects to ensure that refined copper meets the higher copper quality standards established by European customers in 1981 are underway with completion of installation of a new starting sheet machine. Total capital expenditures for these projects will be $9.0 million.

The semi-continuous casting installation began operating in April. Numerous problems, both with equipment and casting techniques, delayed the achievement of satisfactory production rates and quality but these difficulties should be resolved early in 1982.

To comply with Municipal emission standards for selenium, it will be necessary during 1982 to upgrade the emission control equipment in the silver refinery.

Mineral Inventories - operating mines

	Tons 000's 1980	Tons 000's **1981**	Grade						
			Cu %	Zn %	Pb %	Ag o.p.t.	Au o.p.t.	Mo %	K_2O %
Copper Group									
Geco Division	20,871	**19,200**	1.83	3.65	–	1.43	–	–	–
Gaspé Division – Needle Mountain – proven	6,223	**4,185**	1.40	–	–	–	–	–	–
– probable	4,819	**1,432**	1.29	–	–	–	–	0.04	–
Copper Mountain – Sulphide – proven	91,991	**38,275**	0.36	–	–	–	–	0.04	–
– probable	66,468	**44,540**	0.47	–	–	–	–	0.016	–
– Oxide proven	25,180	**23,615**	0.44	–	–	–	–	0.02	–
Babine Division – Bell Mine	53,425	**42,743**	0.51	–	–	–	0.01	–	–
– Granisle – pit	34,732	**19,500**	0.42	–	–	–	–	.004	–
– stockpile		**3,750**	0.28	–	–	–	–	–	–
Zinc Group									
Matagami Division – Matagami Lake	6,025	**5,487**	0.55	6.50	–	0.60	0.01	–	–
– Orchan	117	**24**	0.90	6.11	–	0.60	0.02	–	–
– Norita	3,143	**2,827**	2.32	3.28	–	0.78	0.02	–	–
Mattabi	5,358	**5,089**	0.57	7.33	0.75	2.46	–	–	–
Lyon Lake	3,169	**2,920**	1.38	7.43	0.80	3.87	–	–	–
F Group	620	**205**	0.81	8.22	0.56	1.78	–	–	–
Heath Steele – B proven	21,900	**22,306**	1.19	4.13	1.54	1.76	–	–	–
probable	3,400	**1,229**	1.50	4.28	1.72	1.55	–	–	–
A – C – D proven	5,300	**4,862**	1.34	5.33	0.85	1.60	–	–	–
E proven	1,500	**1,819**	1.51	4.39	2.01	2.33	–	–	–
Other Mining and Metallurgy									
Boss Mountain	5,438	**5,054**	–	–	–	–	–	0.13	–
Chadbourne	1,100	**864**	–	–	–	0.10	0.11	–	–
Central Canada Potash	563,200	**559,800**	–	–	–	–	–	–	27.0
Les Mines Gallen	1,660	**1,772**	0.10	5.40	–	0.75	0.03	–	–
Noranda Lakeshore – oxide		**16,600**	1.17	–	–	–	–	–	–
– sulphide – tactite		**8,900**	1.35	–	–	–	–	–	–
– porphyry		**41,000**	0.65	–	–	–	–	–	–
Northland Gold		5,000,000 cu. yds.				.0044 oz. Au cu. yd.			
Major Subsidiaries and Associates									
Brenda	142,800	**131,500**	0.15	–	–	–	–	.032	–
Brunswick – No 12 Mine: proven	66,229	**62,259**	.29	9.12	3.69	2.81	–	–	–
probable	43,458	**48,429**	.36	9.08	3.78	2.86	–	–	–
– No. 6 Mine: proven	419	**317**	.33	6.73	2.37	2.16	–	–	–
Craigmont	640	**141**	1.37	–	–	–	–	–	–
Kerr Addison – Kerr	415	**682**	–	–	–	–	0.15	–	–
– Mogul	1,447	**660**	–	4.66	3.72	–	–	–	–
Pamour Porcupine	4,308	**3,735**	.14	–	–	–	0.08		
Placer Development – Endako	280,500	**253,600**	–	–	–	–	–	.081	–
– Equity	29,800	**28,200**	–	–	–	3.65	–	–	–
– Gibraltar	254,600	**257,600**	.35	–	–	–	–	.008	–
– Marcopper (Tapian)	116,400	**105,800**	.44	–	–	–	–	–	–
(San Antonio)	220,000	**220,000**	.57	–	–	–	–	–	–
Tara Exploration and Development – Tara Mines		**58,763**	–	9.59	2.67	–	–	–	–

Zinc Group

$ Millions	*1981*	*1980*
100% Basis		
Sales	185.4	235.5
Average net assets employed	278.1	248.6
Noranda's Share		
Sales	165.3	204.3
Operating profit	10.6	31.4
Average net assets employed	261.2	232.9

Matagami Division

The grade of ore mined at the Mattagami Lake mine was lower than expected as difficult conditions necessitated changes in the sequence of mining the remaining ore, all of which is in pillars. The construction of a filtration plant to produce dry mill tailings for backfill was nearly complete at year-end.

At Norita, major changes were made to the stoping system to effect rehabilitation of the cave area in the 'A' ore zone. The planned full production rate of 1,315 tons per day is now expected in the second half of 1982. Copper production will remain below plan until then. However, the mine services — shaft, orepass and ventilation raise — have been developed for mining the lower part of the ore zone.

An extensive regional mineral exploration program found interesting structures but no significant ore intersections. The Orchan mill was closed and all ore is now processed at the Mattagami Lake mill.

Mattabi Mines (60%)

Milled tonnage and ore grade were both lower with the exhaustion of the open pit in the late fall. Subsequent mill feed came from the underground operation via the decline ramp.

Shaft sinking to permit mining the lower ore zone was started in the fall and at year-end the shaft bottom was at a depth of 300 feet. Completion depth will be 1,900 feet. Until the shaft is available, ore production will be at the rate of 1,000 tons per day, considered to be the economical limit of the ramp.

Construction of 96 single status living units was nearly finished at year-end and 14 houses were purchased in accordance with the previously announced $4.0 million employee accommodation program in Ignace.

Heath Steele Mines

Little River Joint Venture
(75% owned by Heath Steele)
Metallurgical results improved steadily during the year and reached plan levels in the fourth quarter. Mill throughput, at 3,775 tons per calendar day, was slightly higher than the previous year. Work started on a second ore pass and a horizontal ore transfer system in the fourth quarter. In light of new drilling information, the mineral inventory in the probable classification was revised downward by two million tons from the previous year.

A new compressed air facility was installed in the mine to save power and, as a fire prevention measure, a new electrical substation was constructed at the concentrator site.

Lyon Lake Division

Lyon Lake ore is processed independently at the Mattabi mill. Extensive ore definition drilling increased the mineral inventory. Stope development proceeded on schedule and production plans were achieved. The metallurgically complex ore resulted in low copper-lead recoveries and concentrate grades.

Engineering was started for the deepening of the shaft from the present depth of 1,350 feet to 2,370 feet to provide access for further exploration. Sinking is expected to commence in mid-1982.

"F" Group Mine

160,000 tons of ore production was stockpiled for independent processing through the Mattabi mill during the winter months. Waste overburden stripping amounted to 1,500,000 tons. The remainder of the ore will be mined during the summer of 1982 and stockpiled for later processing.

Canadian Electrolytic Zinc
(90.2% Direct; 4.3% Indirect)

	Zinc (tons)	*Cadmium (lbs.)*	*Sulphuric Acid (tons)*
1981	224,700	709,200	284,800
1980	228,900	881,300	263,600
1979	219,900	987,500	274,900

In 1981, production constraints in the roasting plants limited zinc output to 94% of capacity. A third roaster-acid plant, together with concentrate handling facilities presently under construction, will eliminate this bottleneck in 1983.

Zinc melting and casting facilities have been modernized. Slab zinc stacking and packing equipment eliminates tasks requiring heavy manual effort. A mechanized casting line for jumbo ingots has increased productivity and improved product quality.

Work is underway on the design of a modified leaching circuit which will make possible the recovery of lead-silver values in zinc concentrate. The new flowsheet will be engineered to provide capacity for retreatment of stockpiled residues which were accumulated during the early years of operation when zinc recoveries were relatively low.

CEZ's commitment to product research and market development through Noranda Sales Corporation, Noranda Research Centre and various international development agencies increased 60% over the previous year.

Other Mining and Metallurgy

$ Millions	*1981*	*1980*
100% Basis		
Sales	326.9	312.2
Average net assets employed	543.9	356.9
Noranda's Share		
Sales	260.2	281.7
Operating profit	(1.8)	30.6
Average net assets employed	441.6	343.2

Alberta Sulphate

Production	*Tons*
Sodium sulphate	42,760
Mineral Inventory	
Salts	2,340,000
Recoverable product	860,000

The Centre Lake dredge mining program was completed and the resulting reservoir will provide a more controllable feedstock to the plant. Salt strength and inventory in solution were maintained.

The market for sodium sulphate remained firm during the year.

Les Mines Gallen (50%)

The property was prepared for open pit production and a treatment plant for mine drainage water was constructed to protect the environment. Pre-production development in the pit was completed with removal of most of the overburden. Waste rock mined was used to fill the underground open stopes.

Milling of the ore at the Horne Division plant began in November but the designed capacity of 1,500 tons per day is not expected to be reached until the second quarter of 1982.

Belledune Fertilizer

Production

	Diammonium Phosphate tonnes	*Monoammonium Phosphate tonnes*
1981	126,000	10,000
1980	155,000	—
1979	190,000	

The overseas market for phosphate fertilizers collapsed in 1981 and export sales were poor. Consequently, the level of operations was adjusted to consume the sulphuric acid made at the Brunswick smelter only. Plant earnings were substantially reduced as rising raw material costs and weak product prices squeezed the operating margin.

New equipment to recover waste heat from the process was successfully put on stream. This installation, which is unique in Canada, will save about 350,000 gallons of oil a year.

Belledune produced a trial lot of a new product, monoammonium phosphate, for which there is a modest demand in eastern Canada.

Boss Mountain Division

Production was curtailed in mid-September to 75% of plan due to weak molybdenum markets that led to a significant increase in molybdenum inventory. The reduced tonnage was offset by higher ore grades resulting in a 19% increase in molybdenum production over 1980 levels.

The $13.3 million expansion project for treatment of open pit reserves at 1,200 tons per day was nearly complete at year-end.

Camlaren (52%)

Mining operations were completed in October and the plant and mill complex dismantled.

The project produced 20,900 ounces of gold and 6,500 ounces of silver but was not profitable.

Chadbourne

The grade of the mineral inventory has been reduced from 0.13 to 0.11 ounces of gold per ton in accordance with experience obtained from mining narrow sections of the orebody. Definition drilling was completed with no addition to the reserves.

Primary development is now essentially complete and preparations are underway for backfilling prior to mining the pillar sections.

Central Canada Potash

Ore production was lower than the previous year due to an electrical malfunction in the skip hoist drive system in July. Underground advance was 36.2 lineal miles for a total of 384 miles since mining began in 1969.

Product shipments were 1,208,000 tons, well below plan, due mainly to high interest rates discouraging customers from holding inventories.

In October, the provincial government refused to allow capital expenditures for a proposed expansion to be included in provincial tax calculations under the Potash Resource Payment Agreement signed in 1979. CCP was the only producer not given approval, on the basis that its expansion would produce an over-supply. Some $10 million was spent or involved in contract cancellations of which $8.7 million will benefit ongoing operations. Representations continue to the provincial government to reverse this discriminatory decision.

Northland Gold (62.5%)

In this placer mine's first year of production, 2,112 ounces of gold were recovered in the dredging period ended early October. Start-up problems together with depressed gold prices made for disappointing results but the production rate should be much higher in 1982.

Noranda Lakeshore Mines

Problems with excessive fines in the ore in the vat leach operation were successfully overcome and copper recovery in the last five months of this year exceeded forecasts. Production for the year totalled 13,035 tons of copper cathodes. Their quality improved upon start-up of the new solvent extraction plant at mid-year, as did metallurgical treatment costs.

Severe ground conditions requiring the use of steel supports in virtually every major heading in the mine delayed mine development progress. Consequently, ore draw scheduling difficulties in the underground block cave operation reduced ore production during the year to 82% of plan.

The oxide ore reserves were reclassified and the inventory of possible ore reduced by 4.5 million tons.

Major Subsidiaries and Associates

$ millions	1981	1980
100% Basis		
Sales	801.8	915.6
Average net assets employed	1,230.4	1,091.8
Noranda's Share		
Sales	504.1	529.2
Operating profit	15.8	61.1
Average net assets employed	369.5	356.5

Brenda Mines (50.9%)

Operating profit (loss) ($ millions)	1981	1980
Noranda's share	(1.4)	7.8

A total of 21 million tons of material was extracted from the open pit, and of this total 11.2 million tons were processed through the concentrator. Concentrate grades and metal recoveries improved.

A new mining shovel was placed in service and the concentrator rougher flotation circuits were revised during the year. Two Brenda-style molybdenum leaching circuits were commissioned at nearby mines.

All copper concentrate production was sold, but copper prices were lower. Molybdenum remained in poor demand and the inventory increased due to continuing depressed conditions in the European steel industry. Molybdenum prices fell to approximately half the average of the previous year.

A new collective agreement was concluded in November with no interruption in operations.

Oil and Gas

Expenditures totalled $10.6 million, comprising $5.2 million for exploration, $4.2 million for production facilities and $1.2 million for land acquisitions.

Gas sales commenced during the year at Cache, Clyde and Florence at an average of 14.2 million cubic feet per day. (Brenda's share being 6.5 MMcf).

Brenda participated or had an interest in the drilling of 74 wells of which 44 were capped as gas producers, three capped as oil wells and 27 abandoned, a success ratio of 64%. Proven plus probable gas reserves at August 1, as established by an independent consultant, were 43.7 billion cubic feet gross (29.2 Bcf net of royalty interests).

Brunswick Mining and Smelting

(64.1%)

Operating profit $ millions	1981	1980
Noranda's share	$19.5	$12.9

Earnings were adversely affected by increased operating costs due to inflation and low prices for lead and silver.

The expansion project to increase mine production capacity to 11,000 short tons per day was completed. Tons hoisted from No. 12 mine and the concentrator output reached record levels.

Exploration continued in the No. 12 mine below the 2,800-ft. level and at the No. 6 underground operation.

Smelter production

Year	Pb. tons	Ag (000 oz.)	Sulphuric Acid (000 tons)
1981	52,700	3,021	175,500
1980	49,500	3,043	157,800
1979	62,600	3,097	196,400

The smelter operated smoothly throughout the year but production was limited by lower than planned concentrate grades. Safety and hygiene statistics were exceptional, with only three lost-time accidents being recorded.

Intensive cost reduction programs are underway at both the mine and smelter.

Kerr Addison Mines

(40.9% Direct; 1.7% Indirect)

Operating profit $ millions	1981	1980
Noranda's share	6.8	6.6

Operating earnings were $11.6 million compared to $11.5 million in the previous year as substantially lower gold prices and reduced production from the gold mine were offset by increased earnings from the 11.1% owned Canadian Hunter joint venture and higher investment income. Uranium production from the Agnew Lake salvage leaching operation was greater than anticipated and, together with profitable uranium deliveries, resulted in a special after-tax gain of $5.6 million compared to $10.9 million in 1980. This operation will be terminated when unit costs exceed uranium prices, which is expected to occur during 1982.

Pamour Porcupine Mines

(48.7%)

Operating profit $ millions	1981	1980
Noranda's share	—	3.6

Lower gold prices, which adversely affected operating earnings, were partially offset by cost reduction programs, including a cutback in exploration activities.

Ores from 11 underground and open pit mining operations within a radius of 113 miles were treated in the two mills.

Lower than expected ore grades necessitated shutting down of the Hoyle and Timmins surface operations and the redesign of the Canadian Arrow open pit. To optimize results, less ore was mined from the Schumacher copper zone and more gold ore was produced. The Timmins underground project proceeded on schedule and within budget. Ore production is planned for mid-1982.

Craigmont Mines

(19.7% Direct; 15% Indirect)
Year ended October 31

Operating profit		
$ millions	*1981*	*1980*
Noranda's share	0.1	1.3

Copper mining is scheduled to end in March 1982. The mill will then be converted to process the coarse iron stockpile into media grade iron concentrate. A limited exploration program continues.

Placer Development

(33.0% Direct; 0.2% Indirect)

Operating Profit (loss)		
$ millions	*1981*	*1980*
Noranda's share	(0.4)	28.8

Production	*Placer's Interest*	*Ore Milled Tons (000)*	*Metal Content in Concentrate — Tons*
Endako Division	100%	11,565	5,880 Mo
Equity	70%	2,105	251 Ag
Gibraltar	71.9%	14,614	45,100 Cu
Marcopper	39.9%	10,751	40,000 Cu
McDermitt	51%	276	1,057 Hg

Earnings declined as a result of depressed metal prices, reduced molybdenum sales and increased expenses. Molybdenum operations remained profitable, but, due to the soft market production was reduced from an annual rate of 6.8 to 5.0 million kilograms. Because of an inventory of 5.0 million kilograms at year end, production in 1982 will be further reduced to an annual rate of 3.2 million kilograms.

Low copper prices and increased costs caused Gibraltar and Marcopper to suffer slight losses on their operations. Equity Silver which completed its first full year of operations, reported a profit of $9.9 million.

The assets of Fox Manufacturing Company in Australia are to be sold over a period of three years for approximately $25 million. The sale of the first one-third interest in 1981 provided a gain of $3.6 million.

The 34% owned Real de Angeles silver-lead-zinc mine in Mexico is expected to start up in mid-1982. Development began on the 100% owned Golden Sunlight gold mine in Montana, U.S.A. and it should be in production by mid-1983.

Empresa Fluorspar (98.9%)

Operating profit (loss)		
($ millions)	*1981*	*1980*
Noranda's share	(0.3)	2.0

Chemical and aluminum demand for acid-grade fluorspar began to weaken in mid-year. Despite the softer market, shipments by 49%-owned Cia Minera Las Cuevas were at good levels, especially to chemical consumers within Mexico.

Shipments of metallurgical grade spar from Las Cuevas were down substantially compared to the years 1980 and 1979. This reflected the continuing slump in world steel markets, especially evident in Europe and Brazil. Metallurgical grade from China at extremely low prices was offered for the first time on the U.S. market. The Mexican producer price was unchanged throughout the year.

The hydrofluoric acid plant, Fluorex, was shut down for four months due to unforeseen environmental problems. Located at Juarez, this plant is 50% owned by Las Cuevas in partnership with another Mexican company.

Tara Exploration and Development (49%)

Operating loss		
($ millions)	*1981*	*1980*
Noranda's Share	(8.5)	(1.9)

Tara Mines

(75% owned by Tara Exploration)
A strike initiated by the craft unions in July was not resolved by year end, and as a result, the mine produced for the first six months only. During this period, 1.2 million tons of ore were treated and 225,700 tons of concentrate produced, some 2% and 8% respectively more than the comparable period in 1980. Further ore definition drilling, both surface and underground, and stope preparation and development haulage were continued west of the shaft pillar.

An unsuccessful attempt by the craft unions to obtain increased wages through the labour court was followed first by refusal to work overtime and then a strike. Numerous discussions during the fall and winter lead to a tentative agreement with the negotiating committee at year end. This was voted down by the union's membership on January 4th. A final settlement was reached in February.

Other Properties and Projects

Northwest Quebec

Mineral Inventory

Tons (000)	Grade % Cu	% Zn	Au o.p.t.	Ag o.p.t.
New Insco				
874	2.59	–	–	0.60
Magusi				
1,520	1.00	4.80	0.04	1.00

Environmental permits have been received for the New Insco mine, but the re-opening has been delayed by current economic conditions. No work was carried out on the nearby Magusi property.

Goldstream Division (65%)

Revelstoke, B.C.

Mineral Inventory

Tons (000)	% Cu	% Zn	Ag o.p.t.
4,343	3.69	2.67	0.56

Construction of the concentrator and service buildings and a permanent camp were essentially completed at this project 58 miles north of Revelstoke. A small open pit and an underground mine will be prepared for start-up in November 1982 at a rate of 1,500 tons per day.

New Mexico Potash

Noranda Exploration Inc. holds leases in Lea County, New Mexico with a mineral inventory of some 164.9 million drill indicated tons, averaging 15% K_2O equivalent.

Hopewell Land

Florida, U.S.A.

The permitting process to bring to production this 13 million ton high grade phosphate deposit near Tampa has been unduly protracted. Following failure of the Hillsborough County Board of Commissioners to approve rezoning for mining and beneficiation of phosphate rock, the Circuit Court of Florida was petitioned to order the Commission to reconsider the merits of the project on a new zoning basis. Expenditures on the project have been minimized pending resolution of the impasse.

Blackbird

Idaho, U.S.A. (75%)

Completion of the permitting process is expected in early 1982. Activity at the site has been reduced due to current economic conditions and until financing for construction and development is arranged.

Ontario Mine

Utah, U.S.A.

(50% Direct, 24% Indirect)

Production has ceased due to current economic conditions. Because of problems with productivity and the grade of ore, as well as low prices for metals, the accummulated expenditures have been written off at a cost after tax of $17.7 million.

Grey Eagle

California, U.S.A.

Construction is well underway. Excessive precipitation during the winter at the site will likely delay production start-up to near the end of the third quarter of 1982. This open pit mine and mill complex is designed for a production capacity of 500 tons per day.

Greens Creek

Alaska, U.S.A. (33.8%)

This is a potential underground mine and mill complex on Admiralty Island. The permitting process and the final engineering feasibility study should be completed in 1982. Exploration continues in the area to increase reserves prior to the 1985 deadline under the Alaska Land Bill.

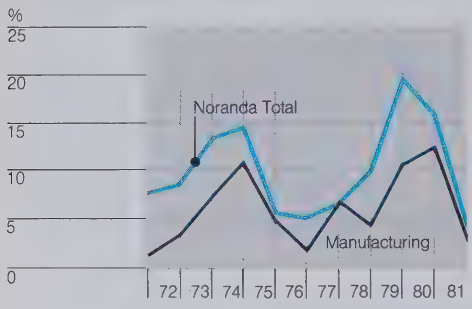
Eluma S.A. (37%)

Continuing its relations with this company, Noranda contracted to purchase, through subscription, 37 percent of the company's outstanding stock for U.S.$75 million. The investment will be made over four years with U.S.$30 million applied prior to the end of June 1982.

Work continues on the copper, gold mining project in the state of Goias and also with regard to Eluma's interest in the copper smelting and refining field. A program has been established to review the copper potential of the Carajas Region. Various placer gold mining possibilities are also being studied.

Manufacturing

Return on average net assets



Total Financial

$ millions	*1981*	*1980*
Sales	1,520.4	1,376.0
Operating profit	58.6	84.2
Average net assets employed	863.0	671.0

The commercial environment in which Noranda's manufacturing interests operate, notably the housing, automotive and related sectors, continued to deteriorate from the latter part of 1980 throughout 1981. To have weathered the storm as well as they did, Noranda's three manufacturing groups demonstrated a degree of balance but more particularly the benefits of the rationalization of operations and management structures plus the capital deployment of recent years. In many instances, a commanding share of market or a special niche therein provided much-needed stability to production and distribution systems.

Noranda's beneficial share of the total 1981 activities of subsidiary and associated companies in manufacturing amounted to sales of $1,520 million and a profit contribution (before interest and after taxes) of nearly $59 million. This represents a return of 6.7% on the average net assets employed of $863 million. These assets are worked by 20,600 employees of whom 5,100 are in Canada, 5,700 in the United States and 9,800 in 11 other countries.

These consolidated earnings compare with $84 million in 1980, which, on the face of it, might appear creditable in the circumstances. However, they are made up of exceptionally good results in the Toronto Group, marginal results from the Montreal Group and severely impaired returns in the Cleveland Group.

All of these operations are now held through Noranda Manufacturing Inc., a holding company whose directors are the principal officers concerned.

It should be noted that these manufacturing operations suffer from declining metal prices as do primary producers. Metals are transferred between all companies in the group at real third party market prices and the resulting inventories are valued at the lower of cost and market. Thus, while conversion costs may be attractive in a year like 1981, the decline in metal prices is an unavoidable charge against earnings.

There was a fairly normal bargaining calendar in 1981. Of the bargaining units, 17 negotiated new contracts during the year with settlements ranging from 7% to 16% in first year wage costs. There were two work stoppages, representing a loss of less than 1% of estimated total working time. Generally, it can be observed that American settlements are at a more realistic level than those in Canada, a result which threatens the competitive position of Canadian manufacturing generally.

	Metal Consumption — Tons	
	1981	*1980*
Canada Wire	88,500	71,900
Noranda Metal	48,600	50,800
	Prime Product Shipped — Tons	
	1981	*1980*
Aluminum Group	155,600	178,200*
Norcast Division	48,500	79,200
Wire Rope	46,100	49,000

*restated

Although the North American economic outlook is at present very uncertain at best, the most likely areas to recover include energy- and resource-related manufacturers. Noranda's manufacturing is quite well positioned to take advantage of such an upturn.

Toronto Group

$ millions	*1981*	*1980*
Sales	776.8	617.4
Operating profit	39.3	31.3
Average net assets employed	303.6	197.0

The upturn enjoyed by Canada Wire in 1980 surprisingly continued strongly throughout 1981 and the group turned in another record year. Clearly this result demonstrates the wisdom of plant rationalization, product group specialization and a continuing program of plant modernization.

The Leaside plant modernization continued with $6.5 million having been invested to provide 220,000 sq. ft. of new building and associated machinery. In November, the company's corporate office moved from the Leaside plant site to new quarters nearby.

The continuous rod mill construction project in Montreal East was the group's major plant investment and should be completed and operating in mid-1982. The remaining major capital project of Canada Wire was its optical fibre cabling plant in Fort Garry. This will be completed also in 1982 and permit Canstar, the group's fibre optic arm, to maintain its significant presence in the fibre optic world in a focussed special segment.

Late in 1981, Canada Wire closed the purchase of the assets of Carol Cable, a major U.S. manufacturer of wire and cable, for a price of U.S. $140 million. This investment ended the long wait for an appropriate entry into the U.S. market and is one which promises considerable synergy.

Carol Cable specializes predominantly in the lighter gauge wire and related products, producing such things as cord sets, jumper cables, machine tool wire as well as fixture and appliance wire. These and many other related items including engine thermostats, and electronic wires, hose clamps, truck mirrors and lighting fixture components are the product of plants in Rhode Island, New Hampshire, Illinois, Massachusetts and California.

The Carol acquisition is by far the largest and most significant acquisition in Canada Wire's history. That it went so smoothly and management has integrated to complete mutual satisfaction augurs well for the future.

Canada Wire's international affiliates continued their aggregate improving trend and produced an important fraction of the group's income. A first venture was made into the European Common Market through the purchase of 49% of the shares of Irish Cable and Wire.

The Grandview group produced an excellent result, particularly so in view of its small capital base. This plastics entry is clearly focussed towards good opportunities and will make significant new capital investments in 1982 to take advantage of the specialties it has identified. Grandview operates plants in the provinces of British Columbia, Saskatchewan and Ontario.

Montreal Group

$ millions	*1981*	*1980*
Sales	280.4	293.8
Operating profit	4.4	2.1
Average net assets employed	124.0	135.0

As stated before, this group has faced the greatest challenge of any in Noranda Manufacturing. It serves limited or declining markets in many cases and has, in the past, operated plants that were less than cost effective. A concerted program to correct this situation was pretty well completed in 1981 and the results are beginning to show.

In wire rope, the U.S. affiliate Bridon-American completed its turnaround and produced a remarkable return on net assets. Wire Rope Industries acquired additional equipment in Western Canada and all of the Canadian assets of Martin Black Ltd. These acquisitions will further enhance the group's wire rope operation which continues to show good returns, although they are unfavourably affected by the present decline in mining and logging activity in Canada.

The copper and brass operations of Noranda Metal Industries are severely restricted by the current depression in the automobile and housing industries. Nevertheless, they do operate much more efficiently than before as a result of the concentration of strip facilities at Fergus, tube at New Westminster and tube and alloys in Montreal East. The Newtown, Conn. plant has gone out of the declining market for smooth copper tube and is now concentrating on finned tubing used in energy transfer applications.

Noranda Metal completed the disposal of all its zirconium assets in the Arnprior plant and the joint venturing of that plant's metal alloy tube mill. The result was a considerable strengthening in the Company's balance sheet, a reduction of losses and a real prospect of early profits.

The Norcast foundry group continued its struggle with gyrating alloy metal prices and the declining mining activity in Canada. While their grinding media sales are down, the general casting business remains attractive.

For the Montreal Group, times remain difficult yet profitable and there is a reasonable base for future development.

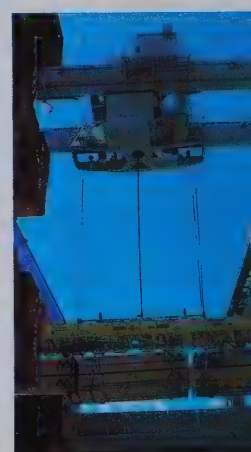
Cleveland Group

$ millions	1981	1980
Sales	463.2	464.7
Operating profit	14.8	50.8
Average net assets employed	434.8	338.0
Tons		
Primary aluminum production	149,000	147,300

Unlike 1980, when it contributed the lion's share of manufacturing profits, in 1981 the Cleveland Aluminum Group registered the greatest decline. Profits of but 29% of the prior year reflected the housing depression in the company's building products activity and the decline in primary aluminum prices from the January 1981 level of 78.22¢ to 71.06¢ lb. at year-end.

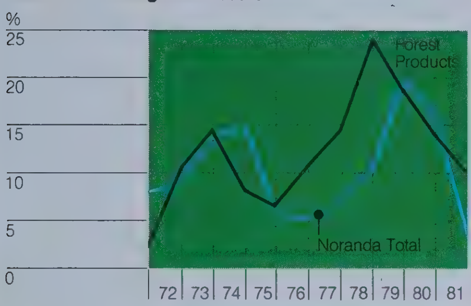
At New Madrid, operations continued their smooth and relatively trouble-free pattern, producing 149,000 tons. The U.S. $240 million third potline construction project proceeded within budget and on schedule for a mid-1982 startup but current market conditions indicate this may be deferred.

The Norandex building product activities produced record sales and held profitability remarkably until the last quarter. The Norandal foil operations in Tennessee were the best since Noranda's acquisition and it is clear that considerable opportunity exists for Norandal in the extension of its foil operations.



Forest Products

Return on average net assets



In terms of the size of commitments and transactions, 1981 was a year of major events in Noranda's forest products group. There was the Atholville renewal project – largest in Fraser's history – followed by Fraser's acquisition of the 100,000 tons per year Thorold fine paper mill, Noranda's acquisition of 49% of MacMillan Bloedel – largest in Noranda's history – (offset by sale of the 28% interest in B.C. Forest Products), Maclaren's acquisition of 27% of Normick Perron and 50% of Maniwaki Forest Industries and continuation of the massive Northwood Pulp expansion. All of these transactions have at the root a policy to acquire or establish balanced, cost effective converting facilities associated with a secure, high quality resource base. In addition, the geographic spread of plants and the product diversity provide a degree of balance and security of market not available to any single member of the group.

Excluding the gain on disposal of BCFP, the 1981 profit represented a 2.2% return on the average net assets employed. This converts to 5.9% on Noranda's average direct investment. At year's end, these companies operated 81 plants, employed 33,000 people and produced 4.5 million tons of all products including lumber, plywood, waferboard, pulp, linerboard, newsprint and fine papers.

The Forests

Because of the importance of the forest and the fact that Canada's natural forests are fully utilized, thus turning the country to the managed forest, this report highlights Noranda's position in that regard. Fraser has the second largest private tree nursery in Canada, Northwood is the first company in B.C. to establish a tree nursery under new legislation designed to encourage same, Maclaren awaits government approval but is otherwise prepared to establish a nursery similar to Fraser's and MacMillan Bloedel is a leader in the 'Designed Forest' with associated nursery facilities in B.C. That company also has a huge commitment to reforestation and genetic upgrading at its seed orchard and nursery in Alabama.

Total Financial

	1981	*1980*
		($ millions)
100% Basis		
Sales	2,701	1,720
Operating profit	55	152
Average net assets employed	2,491	1,403
Noranda's share*		
Sales	1,474	851
Operating profit	21	74
Average net assets employed	1,309	629

*Includes proportionate share of companies not wholly owned.

Major Capital Program

The capital program discussed a year ago continued full bore in respect of committed projects while many major new initiatives were suppressed by the relatively bleak economic outlook. Considering the sums involved in the Atholville ($183 million) and Northwood ($375 million) projects mentioned earlier, it is easy to understand the incentive to acquire existing facilities which often can be acquired at a fraction of their replacement cost. Owners often seem to be happy to part with their holdings at apparent profits in this inflationary time, favouring cash or a preferred security when the immediate profit prospects from working assets are less than cheerful.

MacMillan Bloedel (49%)

Operating loss – $ millions	1981
Noranda's Share	(23.3)

The acquisition of 49% in MacMillan Bloedel Ltd. recognized a then or never situation as another company had started the bidding. Also, while Noranda's BCFP

Production

	Lumber MMfbm	Pulp (000) Tons	Panel Products MMsq.ft 1/16	Newsprint & Paper (000 tons)	Container board (000) Tons
1981*	895	377	4,188	893	473
1980	1,171	482	4,566	1,307	481
1979	1,285	413	5,676	1,073	457

*Acquired May 1, 1981.

investment had been very satisfactory over the 11 years held, it was increasingly an impediment to activities by other members of the group due to site and product conflicts. While tinged with both regret and satisfaction, the disposal yielded an after-tax profit of $77 million which, when added to dividends received over the 11 years, amounted to an average rate of return of 18%.

The opportunity to participate in ownership of MacMillan Bloedel was welcome indeed. That company, which is renowned to have the premier forest base in Canada, virtually entirely in B.C., also has an excellent base in Alabama as well as some interesting overseas interests. MacMillan Bloedel operate 10 sawmills, six plywood and waferboard plants, three pulp mills, 10 newsprint machines, three linerboard and medium machines, one fine paper machine, 25 corrugated container plants, 39 building product distribution centres and a sophisticated marketing infrastructure. At acquisition, the Company was in the midst of a major capital program centred on its B.C. base, but also including a substantial expansion of the Alabama linerboard output. The successful completion of the Alberni Pacific sawmill and the #11 newsprint machine at Powell River promise early returns from this program. These three projects involve an aggregate new investment of $580 million, financing of which is within the Company's present capacity.

MacMillan Bloedel was badly affected by the six-week west coast strike in mid-summer, which was lengthened for them due to the intransigence of one small local of another union holding out the Alberni plant for an extra three weeks. With the subsequent collapse of all wood product markets, the company is hard put to break even though its balance sheet remains robust.

From Noranda's point of view, the MacMillan Bloedel investment represents a previously undreamt of holding, and places Noranda's group of forest companies in the forefront of the Canadian industry. While early returns are non-existent, in this cyclical industry the long term should be satisfactory and fortified by the complementary nature of the companies.

Productive Timberlands Managed
100% Basis (000 Acres)

	Owned	*Cutting Rights*	*Total*
MacMillan Bloedel	719	3,296	4,015
Fraser	765	1,106	1,871
Maclaren	40	1,812	1,852
Northwood Pulp	2	2,698	2,700
	1,526	8,912	10,438

Total Production

	Lumber (MM fbm)	*Panel Products* (MM sq. ft. $^1/_{16}$")	*Market Pulp* (000 tons)	*Newsprint and Paper* (000 Tons)	*Container-board* (000 Tons)
100% Basis					
1981	1,388	4,881	839	1,444	348
1980	1,418	3,158	961	1,175	31
1979	1,482	2,017	837	990	31
Noranda's Share					
1981	639	2,273	444	816	177
1980	567	1,231	438	591	19
1979	574	659	315	387	17

Northwood Mills

	Sales		
	Northwood Mills	Northwood Building	
	Lumber MMfbm	Lumber MMfbm	Panelboard MMSM 1/16"
1981	697	264	917
1980	646	232	1,244
1979	669	234	811

Northwood Mills endured an exceedingly difficult year, which saw the collapse of most of the markets it serves. The slow pace presented an opportunity for important personnel redeployment as well as initiation of a study project respecting timberlands in Alberta. All of Noranda's forest product investments are now held by Northwood Mills, whose board is representative of all the interests involved.

Northwood Pulp and Timber (50%)

Operating profit $ millions	1981	1980
Noranda's Share	5.1	10.9

	Production			
	Plywood MM sq. ft. 1/16	Lumber MMfbm	Pulp Tons (000)	Waferboard MM sq. ft. 1/16
1981	842	471	207	831
1980	775	537	237	778
1979		593	244	401

Northwood Pulp suffered a six-week strike like the rest of the Western industry. This served to crimp earnings and also add some $10 million to the cost of the expansion project, which was also shut down. Although economic circumstances may not be as good as originally expected on start-up, the pulp project appears to be on time for a midsummer completion. Northwood's waferboard plants in Chatham, N.B. and Bemidji, Minnesota are modern cost effective facilities, but they cannot operate profitably in current markets. Nevertheless, the company still has confidence in the future of the waferboard products.

James Maclaren Industries
(formerly Maclaren Power & Paper)

	Production		
	Newsprint (000) Tons	Pulp (000) Tons	Lumber MMfbm
1981	180	125	18
1980*	176	126	24
1979	169	123	26

*Acquired February, 1980

While engaged only in a capital project for conversion to ultra high yield sulphite, Maclaren continues to examine alternative modernization schemes for its Thurso pulpmill and Masson newsprint machines. In the East, both Maclaren and Fraser turned in relatively good earnings. In Maclaren's case, these were fortified by capital gains from sale of some portfolio investments. Maclaren has strengthened its raw material base through acquisition of a 50% interest in Maniwaki Industries, a producer of hardwood lumber, veneer and parquet flooring. Maclaren also acquired 27% of Normick Perron, Eastern Canada's leading producer of softwood lumber, plus plywood and waferboard.

Fraser Inc. (63%)

Operating profit $ millions	1981	1980
Noranda's Share	12.2	19.3

	Production			
	Lumber MMfbm	Pulp (000) Tons	Paper (000) Tons	Boxboard (000) Tons
1981	74	76	459	28
1980	93	95	414	31
1979	95	95	402	31

Fraser embarked on the largest project in its history – the $183 million conversion and modernization of its Atholville pulp mill. The company also became a Canadian fine paper producer with the acquisition of the 100,000 tons per year mill formerly the property of Abitibi-Price at Thorold, Ontario. Its third major project embarked on was a high pressure steam line and related facilities ($53 million), which will optimize energy efficiencies at Edmundston-Madawaska.

When these projects are completed, Fraser will be technologically modern in nearly every respect. This program which began in 1970 should enable the Company to be very competitive throughout the 1980's.

Venture Capital

During the last three years Noranda has become increasingly involved in taking significant equity participation in companies in the Canadian "high-tech" sector as well as four venture capital partnerships. This activity, principally conducted by Maclaren represents to us industrial exploration in areas of technology that present tremendous challenges and opportunities.

To date this has been a most rewarding venture and we anticipate continuing this policy of committing investment funds to young Canadian companies which demonstrate outstanding technological leadership and superior market growth potential, coupled with exceptionally strong managerial resources. The importance of these activities to Canada's future and to that of Noranda should not be under-estimated. Investments in this sector as of December 31, 1981 approximated $70 million. In addition, the company is committed to invest a further $25 million in shares of another company over a two-year period — subject to this latter company fulfilling certain conditions. Because of their expertise and initiative these activities are generally managed by Maclaren.

Environmental Control

Capital environmental expenditures for air, water, industrial hygiene, waste disposal and environmental research totalled $64 million in 1981, bringing the cumulative total since 1971 to $237 million.

Acid rain was the major environmental issue in 1981. Hundreds of studies have now been conducted by governmental and private sector scientists to determine the extent, consequences, causes of, and possible solutions to the acid rain phenomena. There has been no consensus on the interpretation of the results nor on the need for and type of corrective action. There is agreement, however, on the complexity of the situation. A Noranda acid rain study commenced in 1977 and the results document that the Horne operation was no measurable contributor of acid precipitation in Quebec or elsewhere. This conclusion is supported in recent publications by governmental scientists.

Decisions on environmental issues must include cost benefit analysis. It is on this basis that Noranda continues to search for economically viable solutions to its sulphur dioxide discharges. In late 1981, the Horne Division entered into discussions with a Quebec based company which has developed a proprietary process for sulphur dioxide containment.

A high level of control technology for sulphur dioxide, one of the acid rain precursors, continues to be designed into new and expanding smelting capacity. Both the Canadian Electrolytic Zinc roaster and acid plant expansion and the design for the new zinc facility in New Brunswick incorporate a sulphur dioxide capture efficiency exceeding 99%.

During 1981, the Noranda Group collectively produced the second largest quantity of sulphuric acid in Canada. In equivalent sulphur dioxide terms, this volume translates into 376,000 tonnes of the acid rain precursor which is not being discharged into the environment. Capture efficiency is approximately 40%.

Noranda Aluminum in New Madrid, Missouri completed and placed in service a U.S. $17 million dry scrubber for air pollution control of the no. 1 potline. The new installation tested well within the State of Missouri and the U.S. Environmental Protection Agency requirements. A similarly designed technology with additional control of secondary emissions is being installed on the new third potline.

Water pollution control continues to be a major area of environmental expenditures within the Noranda Group. Improved waste water treatment efficiency, reduction of effluent volumes through water conservation, spill control and separation of contaminated and non-contaminated streams are the focus of attention.

During 1981, Northwood Pulp and Timber received an award from the British Columbia Water & Waste Association for continuing efforts toward environmental control and for a positive attitude toward the environment. In keeping with the level of performance, Northwood Pulp and Timber is designing and implementing best practicable control technology into its major plant expansion. Approximately $6 million were expended in 1981 for an additional effluent treatment pond, for water conservation schemes and for spill control for the new facility. A further $1 million was committed to environmental improvements for the existing mill.

Fraser is modifying its water and air effluent control systems at the Edmundston, New Brunswick mill. Substantial water flow reductions, better treatment facilities for biological oxygen demand and suspended solids and improved sulphur dioxide control through the installation of an absorption system have been accomplished. Expenditures in 1981 reached approximately $2 million.

Industrial hygiene represents the third largest area of 1981 capital environmen-

tal expenditure within the Noranda Group. The abatement of gaseous, particulate and fume materials released from furnaces and other dust generating sources within the workplace received priority treatment at numerous operating facilities. Among these, two Divisions deserve particular mention – Babine and Horne. A new screening facility was constructed at the Babine-Granisle mill to remove this major source of dust from the crushing/screening plant. In-plant concentrations have been reduced very significantly. At the Horne Division, existing converter hoods have been and continue to be replaced with massive steel structures which greatly improve the capture efficiency of fumes. Gaseous sulphur dioxide and metallic fume concentrations are decreasing in the working environment as a result of these abatement activities.

The treatment of milling wastes in tailings dams continued to be the technique employed for primary solids separation at all plants. There were major dam construction expenditures at a number of locations, including the Gaspé Division, Central Canada Potash and Goldstream. Revegetation work to improve the aesthetics, dusting and stability of both active and inactive dams was extended to the operations in New Brunswick, the Matagami Division and Geco.

Biological monitoring of the receiving waters in the proximity of a number of operating locations developed meaningful data on the effects of effluents on flora and fauna. In-plant noise abatement was pursued vigorously with appreciable improvement being made on specific types of equipment.

Industrial hygiene surveys upon which recommendations are based have been and are being conducted at a number of companies within the group. Research work amounting to $410,000 was expended on the handling of electrostatic precipitator dust and thiosalt destruction in waste waters.

Noranda Research Centre

The major thrust of the Research Centre's work is to increase the efficiency and cost effectiveness of the company's operations. The research may require new or improved processes and products, new applications for commodities produced by Noranda or the provision of technical assistance in energy conservation and environmental control.

At Canadian Electrolytic Zinc, the Research Centre is collaborating on improvements in the zinc casting operation and conducting studies on the treatment of leach residues. At the Smelting Division of Brunswick Mining and Smelting, a new process for the recovery of metal from softening dross was successfully demonstrated and an improved method for softening lead is also being tested.

Joint research efforts with Noranda Aluminum have resulted in a more energy-efficient anode baking practice, and a new instrument for monitoring the flatness of aluminum sheet is undergoing trial at Norandal.

The cooperative market development program with Noranda Sales Corporation and alloyers is winning wide acceptance of zinc alloys for gravity casting applications. One of the alloys, developed at the Research Centre, was successfully proven for die casting applications and is now being offered to die casters in Europe and North America.

The development of technology to open up new business opportunities for Noranda is also an important function of the Centre. The joint research program with the Electrolyser Corporation on advanced electrolytic cells for the production of hydrogen reached an important milestone. Commercial scale cells incorporating Generation I design are being installed in an experimental plant at the Varennes research station of Hydro-Quebec, with start-up in the first quarter of 1982. Marketing activities by Electrolyser Inc., a joint company of Noranda and the Electrolyser Corporation, were directed toward locating an appropriate site for a 100 MW commercial prototype plant and identifying other prospects for plants larger than 25 MW throughout the world. Research is progressing on Generation II technology incorporating a more advanced design.

An adjacent laboratory building in Pointe Claire was purchased to provide for the future growth of the Research Centre. At year end, 160 people, of whom 73 are professionals, were employed at the Centre. Total spending was $8.4 million.

Occupational Health and Safety Guideline for Statement of Policy

Each company, division and location in the Noranda Group is required to operate according to a current written statement of policy regarding occupational health and safety (OH&S). The policy must refer to the principles and concepts outlined hereafter. Language used may vary according to circumstances but these variations are insignificant so long as each principle be stated clearly and concisely in the policy. It follows that practice and procedures must fully support the written policy.

The fundamental policy is that every employee of the Noranda Group is entitled to a job which is safe to do. Every employee is also entitled to a work environment which is safe; each work environment must be designed, constructed, operated and maintained in accordance with established industrial hygiene and safety engineering standards.

The actual workings of the safety program will accord with the following principles.

1. Commitment – Maintaining a healthy and safe working environment is a first priority and the company is unconditionally committed to this. No job or task – in operations, office, field or on the road – is so important that it should be performed without first taking full account of the safety and health risks involved and protecting against those risks by taking every precaution reasonable in the circumstances.

2. Attitude – A proper attitude which critically affects behaviour throughout the whole organization – from the employee in the workplace to the chief executive officer of the company – is the very essence of good safety and health practices. This attitude is to be instilled and maintained through education, training, good work practices, good management practices and by example.

3. Cooperation – A cornerstone of good OH&S practices is cooperative relationships; adversarial relationships undermine the OH&S program. It is important that these cooperative relationships be established and maintained throughout the whole enterprise. Where groups of employees are union-represented the company will take all reasonable steps to ensure that, for its part, the adversarial aspect which accompanies the usual management-union relationship is absent in matters concerning OH&S. Employee representatives will be encouraged to participate in the cooperative undertaking.

4. Openness – Meaningful involvement and participation — foundations required for a positive attitude and cooperation – are not possible without the relevant information, data and other resources. The company will ensure that these are provided in order that all concerned are able to fulfill their proper roles in the OH&S program.

5. Roles and Accountabilities – External factors (laws for example), do not, in themselves, result in good OH&S; a comprehensive internal responsibility system has to be established and maintained. Such a system is strongly anchored in the direct or central responsibility which flows up and down the line from the employee in the workplace to the chief executive officer. Responsibilities of a different or indirect nature, but no less important to the proper functioning of the internal responsibility system, devolve upon others: employee representatives, safety and health committees, safety personnel, medical and health personnel, engineering staff, trainers and so forth. It is essential that the roles and responsibilities of these various persons be harmonized into a comprehensive internal responsibility system in a manner which encourages the maximum contribution from each in support of improvements in OH&S. In measuring overall job performance the company will take into consideration an employee's performance in and attitudes towards health and safety.

6. Education and Training – Fundamental to a good OH&S program are education and training. In addition to providing sessions specifically related to OH&S, the company will ensure that the OH&S component of all its educational and training programs is accorded appropriate emphasis.

7. Examinations – Medical surveillance examinations, both pre-employment for proper employee placement and periodic for continued employee evaluation, play an important role in an OH&S program. The company will provide examinations as often and as comprehensive as deemed prudent in the circumstances.

8. Legal Compliance – Full compliance with legal requirements in the applicable jurisdiction will be met as a minimum. Where it is reasonable and feasible to maintain conditions or set standards superior to those required by law the company will strive to provide superior conditions to meet or surpass superior self-imposed standards.

9. Loss Management – Some Group companies, divisions or locations have adopted a loss management approach which, in conjunction with attention to matters conventionally associated with OH&S, such as injury and disease prevention, also addresses loss due to fire, damage to property, vehicle incidents, etc. and audits. In such cases it is acceptable to include these other aspects in a policy statement; however, these aspects should not be accorded an emphasis which in any way detracts from or waters down OH&S which is the core concern of the policy.

Effects of Inflation

The financial strength of companies and individuals is greatly eroded by inflation, but the measurement of that erosion is difficult. A committee appointed by the Ontario government in 1977 recommended an approach that attempts to show the effect of inflation on funds generated by a business.

Application of this method to Noranda's 1981 results, using a Statistics Canada index (Business Component of the Gross Capital Formation part of the Implicit Price Index), produces the statement shown on the right. It should be emphasized that this is a general business index which may not reflect the full impact of inflation on the costs of the company. However, the intent of the statement is to provide only a perspective.

Funds generated from operations (total from statement of changes in financial position)		$301,200,000
From this, deduct the funds required to finance original cost of productive assets (historical cost depreciation)		157,700,000
Leaving this amount available, on a historical accounting basis, for distribution to shareholders or for expansion		143,500,000
But to take account of the increased cost of maintaining operating capacity in our inflationary environment, the following funds should also be deducted:		
To replace inventories at higher prices	$ 80,000,000	
For plant, machinery and equipment at higher prices	130,000,000	
	210,000,000	
Partly offsetting these requirements, additional funds may be available from borrowing if present debt-equity ratio is maintained	67,500,000	142,500,000
Which leaves the funds available from the year's operations for distribution to shareholders or investment in expansion of facilities		$ 1,000,000

This statement demonstrates that in 1981 $367.7 million ($157.7 million plus $210 million) should have been spent to maintain the business, given the level of inflation Canada has been experiencing, of which $67.5 million could be borrowed. The company generated $301.2 million which on this basis would have left $1 million to distribute to shareholders or to spend on growth, assuming no change in the existing debt-equity ratio.

What in fact happened in 1981 was that we spent some $319 million (net) on plant and working capital to maintain the business, $1,162 million on acquisitions and expansion of facilities and $173 million to pay dividends to shareholders. $1,291 million of outside capital had to be raised to help pay for these expenditures.

While the acquisition and expansion activity adds to Noranda's balance sheet and future earning power, this spending does not represent replacement of capital employed in existing businesses indicated by the above statement. The calculated shortfall of some $49 million in 1981 adds to the capital spending shortfall experienced in previous years which Noranda must be prepared to make up if its capital base is not to be eroded.

Although the debt to equity ratio of the company remained healthy due to the significant issue of capital stock during the year, the funds generated from operations during the year were inadequate even to meet the dividend payments made — which represented only a 6.6% return on shareholders' equity — let alone the inflation-induced spending calculated to be required to maintain operating capacity.

Accounting Policies

Basis of presentation of financial statements
The accompanying financial statements are prepared in accordance with accounting principles generally accepted in Canada and include, the accounts of Noranda Mines Limited (the Company) and all of its subsidiaries (Noranda). Interests in associated companies in which it has significant influence but not majority share ownership are accounted for on the basis of cost plus equity in undistributed earnings since the dates of investment. The difference between the cost of the shares of associated companies and the underlying net book value of the assets is amortized over the life of the assets to which the difference is attributed.

Certain subsidiary and associated companies own shares in the Company. The Company's pro rata interest in the carrying value of such shares has been deducted from shareholders' equity. Similarly, the Company's earnings per share have been calculated on the number of shares outstanding after reduction for such intercompany holdings.

Translation of foreign currencies
Amounts stated in currencies other than Canadian dollars are translated as follows: working capital at exchange rates prevailing at the year end; fixed and other long-term assets, long-term debt, and depreciation provisions on the basis of historic rates of exchange; revenues and expenses (other than depreciation) at average rates during the year. Exchange translation gains and losses are included in consolidated earnings.

Inventories
Mine products are valued at estimated realizable value and other inventories at the lower of cost (determined on a first-in first-out or average cost basis) and replacement value.

Futures contracts
From time to time, Noranda owns futures contracts for the purchase or sale of metals and currencies not related to production. These contracts are not reflected in Noranda's accounts, beyond the amount of deposit required, until maturity date although provision is made for any estimated unrealized losses.

Depreciation and development charges
Depreciation of property, buildings and equipment and amortization of development expenditures are based on the estimated service lives of the assets calculated using the method appropriate in the circumstances, for the most part straight-line for fixed assets and unit of production for development.

Exploration
Mineral and petroleum exploration expenditures are charged against current earnings unless they relate to properties from which a productive result is reasonably certain or on which work is in process. Gains on sale or recoveries of costs previously written off are normally credited against exploration expense.

Preproduction costs
Preproduction costs including interest on major projects are deferred until the related facility achieves commercial production volume and are amortized over a reasonable period on either a straight-line or a unit of production basis.

Income taxes
Noranda follows the tax allocation method of accounting for income taxes. Under this method, timing differences between reported and taxable income result in provisions for taxes which are not currently payable. Such timing differences arise principally as a result of claiming depreciation, development, exploration and preproduction costs for tax purposes at amounts differing from those charged to reported income.

Investment tax credits are not reflected in earnings in the year they arise unless there is virtual certainty that they will be realized.

Interest
Interest expense is charged to earnings except interest that can be identified with a major capital expenditure program.

Capital leases
Noranda leases certain property, buildings and equipment under long-term capital leases which are recorded in the financial statements as fixed assets and long-term debt.

Pension costs
Noranda has various contributory pension plans which cover substantially all employees. Current service pension costs are charged to earnings as they accrue. Past service costs are charged to earnings at rates which, based on annual independent actuarial estimates, will fully provide for the obligations over periods not longer than those permitted by various regulatory bodies.

Noranda Mines Limited
(Incorporated under the laws of Ontario)

Consolidated Balance Sheet

(in thousands)
December 31

Assets	***1981***	*1980*
Current assets		
Cash and short-term notes	**$ 25,806**	$ 64,147
Marketable investments, at cost (quoted market value $158,921; 1980 – $222,205)	**135,891**	161,280
Accounts, advances and tolls receivable	**665,317**	578,063
Inventories	**909,119**	805,992
	1,736,133	1,609,482
Investment in and advances to associated and other companies (note 2)	**1,159,265**	529,364
Fixed assets		
Property, buildings and equipment, at cost	**3,225,385**	2,622,634
Accumulated depreciation	**(1,188,210)**	(1,085,754)
	2,037,175	1,536,880
Other assets (note 4)	**316,071**	262,495
	$5,248,644	$3,938,221

Auditors' Report

To the Shareholders of
Noranda Mines Limited

We have examined the consolidated balance sheet of Noranda Mines Limited as at December 31, 1981 and the consolidated statements of earnings, retained earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of Noranda Mines Limited as at December 31, 1981 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Clarkson Gordon
Chartered Accountants

Toronto, Canada,
February 25, 1982.

Liabilities	1981	1980
Current liabilities		
Bank advances (note 5(c))	**$ 244,836**	$ 182,197
Accounts payable	**500,766**	476,283
Taxes payable	**81,747**	115,051
Debt due within one year	**41,752**	14,430
	869,101	787,961
Deferred liabilities and revenues	**38,439**	26,929
Taxes provided not currently payable	**339,173**	342,834
Long-term debt (note 5)	**922,315**	580,477
Minority interest in subsidiaries	**210,204**	199,038
Shareholders' equity (note 7)		
Capital stock	**1,641,444**	772,656
Retained earnings	**1,388,180**	1,394,969
	3,029,624	2,167,625
Less the Company's pro rata interest in its shares held by subsidiary and associated companies	**(160,212)**	(166,643)
	2,869,412	2,000,982
Commitments and contingencies (note 6)		
	$5,248,644	$3,938,221

(See accompanying notes)

On behalf of the Board

Alfred Powis

A. Powis, Director

W. P. Wilder

W. P. Wilder, Director

Consolidated Statements of Earnings and Retained Earnings

(in thousands)
Years ended December 31

Earnings	***1981***	*1980*
Revenue		
Sales	**$2,944,350**	$2,877,769
Investment income (including $67,000 gains on disposal)	**86,044**	11,526
	3,030,394	2,889,295
Expense		
Cost of production	**2,272,728**	1,942,612
Administration, selling and general expenses	**207,172**	161,835
Depreciation ($137,254; 1980 – $113,866) and amortization	**157,673**	129,959
Exploration	**121,601**	57,261
Interest–net (including interest on long-term debt of $103,903; 1980 – $39,373)	**95,444**	48,421
	2,854,618	2,340,088
	175,776	549,207
Income and production taxes	**59,415**	242,242
Minority interest in earnings of subsidiaries	**9,079**	28,894
	68,494	271,136
Earnings before the following	**107,282**	278,071
Share of earnings (losses) in associated companies	**(1,503)**	83,096
Unusual items (note 10)	**59,027**	47,188
Earnings	**$ 164,806**	$ 408,355

Earnings per share	**$ 1.33**	$ 4.06

Retained Earnings		
Balance, beginning of year	**$1,394,969**	$1,113,510
Earnings	**164,806**	408,355
	1,559,775	1,521,865
Dividends (note 7(e))	**171,595**	126,896
Balance, end of year	**$1,388,180**	$1,394,969

(See accompanying notes)

Consolidated Statement of Changes in Financial Position

(in thousands)
Years ended December 31

	1981	*1980*
Source of Funds		
Operations –		
Earnings	**$ 164,806**	$408,355
Depreciation and amortization	**157,673**	129,959
Taxes provided not currently payable	**(3,661)**	108,665
Minority interest in earnings of subsidiaries	**9,079**	28,894
Share of earnings less dividends of associated companies	**32,334**	(58,681)
Unusual items	**(59,027)**	(47,188)
	301,204	570,004
Working capital acquired through acquisition of –		
Maclaren Power & Paper Company	**—**	105,077
Carol Cables (note 3(b))	**105,180**	—
Proceeds on sale of –		
British Columbia Forest Products	**180,157**	—
Koongarra	**—**	57,300
Issue of common shares	**500,826**	12,737
Long-term financing	**188,692**	64,050
Fixed asset disposals	**25,624**	17,081
Other	**11,547**	(9,763)
	1,313,230	816,486
Use of Funds		
Investment in MacMillan Bloedel (note 3(a)) –		
Purchase of shares	**630,500**	—
Shares previously owned	**63,891**	—
Issue of preferred shares	**(500,677)**	—
	193,714	
Fixed assets	**596,455**	292,966
Deferred development, exploration and other expenditures	**83,696**	87,768
Investments and advances	**59,052**	55,233
Dividends – shareholders	**162,032**	126,896
– minority shareholders of subsidiaries	**11,176**	23,736
Payment of long-term debt	**19,251**	95,729
Redemption of preferred shares	**142,343**	—
	1,267,719	682,328
Increase in working capital	**45,511**	134,158
Working capital		
At beginning of year	**821,521**	687,363
At end of year	**$ 867,032**	$821,521

(See accompanying notes)

Notes to Consolidated Financial Statements
December 31, 1981

1. Accounting Policies
The principal accounting policies followed by Noranda are summarized under the caption "Accounting Policies".

2. Investments
(a) Investments in and advances to associated and other companies consist of:

	Noranda's Direct Interest	Carrying Value 1981	Carrying Value 1980
Associated companies carried on an equity basis –		*(in thousands)*	
British Columbia Forest Products Limited	–	$ –	$101,388
Craigmont Mines, Limited	20%	2,113	3,312
Kerr Addison Mines Limited	41%	19,237	6,129
MacMillan Bloedel Limited	49%	659,430	–
Northwood Forest Industries Limited	50%	85,017	77,449
Pamour Porcupine Mines, Limited	49%	2,686	8,745
Placer Development Limited	33%	78,883	75,083
Tara Exploration and Development Company Limited	49%	47,678	53,248
Frialco/Friguia Guinean Consortium	20%	15,762	17,005
Frenswick Holdings Limited investment in Zinor Holdings Limited		90,536	84,772
Associated manufacturing companies		74,455	54,213
Other companies		70,852	30,111
		1,146,649	511,455
Other investments and advances, at cost –			
Shares		8,236	13,019
Advances		4,380	4,890
		$1,159,265	$529,364

(b) Included above are shares carried at a book value of $846,158,000 which had a quoted market value of $653,984,000 at December 31, 1981 ($260,612,000 and $688,968,000, respectively, at December 31, 1980). The latter amount does not necessarily represent the value of these holdings which may be more or less than that indicated by market quotations.

3. Significant Acquisitions
(a) MacMillan Bloedel Limited –

Pursuant to an offer made on March 27, 1981, Noranda acquired approximately 8.9 million common shares, 1 million $2.00 Class B convertible preferred shares Series 1 and 1 million $2.08 Class B convertible preferred shares Series 2 of MacMillan Bloedel Limited (MacMillan Bloedel). This acquisition, together with a previous holding of approximately 1.7 million common shares, brings Noranda's interest in MacMillan Bloedel to 49%.

The total purchase consideration of $694,391,000 consisted of the issuance of $500,677,000 Series A preferred shares and $193,714,000 cash. The excess of the total purchase consideration over Noranda's share of the underlying net book value of identifiable assets at the acquisition date, amounting to $254,126,000, has been allocated to timber holdings and land. The portion allocated to timber holdings will be amortized as the related timber is harvested. The accompanying consolidated statement of earnings includes the results of MacMillan Bloedel on an equity basis from the date of acquisition.

Summarized financial information of MacMillan Bloedel is as follows:

	1981	1980
Financial position –	*(in thousands)*	
Assets:		
Current	$ 721,690	$ 774,798
Investments and other	84,840	77,056
Property, plant and equipment	1,266,306	1,121,012
Other	99,302	102,364
	2,172,138	2,075,230
Liabilities:		
Current	408,509	353,145
Long-term debt	596,790	550,803
Deferred income taxes	196,134	226,859
Minority interest in subsidiaries	6,259	23,117
	1,207,692	1,153,924
Shareholders' equity	964,446	921,306
	$2,172,138	$2,075,230
Results of operations –		
Sales and other income	$2,230,136	$2,456,216
Costs and expenses	2,280,099	2,276,005
	(49,963)	180,211
Income taxes	(31,326)	62,968
Minority interest in subsidiaries	(4,188)	(4,041)
Other (including gains on disposal)	26,132	(17)
Net earnings	$ 3,307	$ 113,185

(b) Carol Cables –

On October 2, 1981 Noranda purchased the assets and assumed the liabilities of Carol Cables, an American wire and cable producer, for $167,902,000 ($140,000,000 U.S. consisting of $110,000,000 cash and $30,000,000 7 year 10% notes).

The transaction is summarized as follows:

Net assets acquired –	*(in thousands)*
Working capital	$105,180
Fixed assets	62,289
Other assets	4,928
	172,397
Long-term liabilities	4,495
Total consideration	$167,902

4. Other Assets

	1981	1980
	(in thousands)	
Deferred preproduction and mine development	$255,025	$209,053
Deferred exploration	26,873	36,502
Other	34,173	16,940
	$316,071	$262,495

5. Debt

(a) Long-term debt (in thousands)

	1981	1980
Bonds, debentures, notes		
Noranda Mines Limited		
9¾% notes due July 15, 1982	$ 25,000	$ 25,000
9¾% sinking fund debentures May 1, 1994	39,210	39,860
7½% sinking fund debentures October 1, 1988	19,468	19,978
9¼% sinking fund debentures October 15, 1990	31,565	32,227
Norandex Inc.		
5½%-9¼% mortgage notes payable in monthly instalments to 1990 – ($4,534 U.S.; 1980 – $5,275 U.S.)	4,880	5,683
Noranda Aluminum Inc.		
10½% secured notes due October 1, 1995 ($66,800 U.S.; 1980 – $71,200 U.S.)	68,678	73,192
9.75% note due January 10, 1987 ($30,000 U.S.; 1980 – $30,000 U.S.)	35,229	35,229
9.75% note due 1985 ($20,000 U.S.; 1980 – $20,000 U.S.)	23,400	23,400
Variable rate notes due February 1, 1983 to August 1, 1987 ($25,000 U.S.; 1980 – $25,000 U.S.)	29,250	29,250
Noranda Inc.		
10% note payable due 1988 – ($30,000 U.S.)	35,979	–
Brunswick Mining and Smelting Corporation Limited		
5.85% first mortgage sinking fund bonds series "A" maturing April 1, 1986	3,079	4,579
7.25% general mortgage sinking fund bonds, series "A" maturing August 15, 1987	5,144	5,207
11% general mortgage sinking fund bonds, series "B" maturing December 1, 1996	17,342	17,349
Fraser Inc.		
6⅛% sinking fund debentures due April 1, 1987 – ($4,500 U.S.; 1980 – $5,250 U.S.)	4,943	5,755
10¾% sinking fund debentures due June 1, 1992 – ($32,670 U.S.; 1980 – $35,000 U.S.)	33,694	36,023
Notes payable	82,335	32,000
Purchase money mortgage	24,000	24,000
James Maclaren Industries Inc.		
5¾% sinking fund debentures due 1987	8,831	9,388
Canada Wire & Cable Limited		
Bank notes ($110,000 U.S.)	130,449	–
Sundry indebtedness	37,586	21,930
	660,062	440,050
Obligations under capital leases		
Noranda Aluminum Inc.		
5.90% sinking fund industrial revenue bonds, maturing November 1, 1993 ($55,180 U.S.; 1980 – $57,360 U.S.)	59,180	61,518
8% pollution control revenue bonds due April 1, 2001 – ($10,500 U.S.; 1980 – $10,500 U.S.)	10,315	10,315
Other leases	8,473	6,249
	77,968	78,082
Notes payable (including $50,000 U.S.; 1980 – $44,525 U.S.)	226,037	76,775
	964,067	594,907
Debt due within one year	41,752	14,430
Total	$922,315	$580,477

Maturities of long-term debt are as follows:
1983 – $47,189; 1984 – $212,318; 1985 – $43,386; 1986 – $109,176 and subsequent $510,246.

(b) Notes payable –

Notes payable of $226,037,000, representing promissory notes with maturities in 1982 have been classified as long-term debt as a result of unconditional commitments the Company has received from its bankers for contractual term credits expiring from December 31, 1984 to October 31, 1986.

(c) Collateral for bank loans

Shares of Frenswick Holdings Limited held by certain subsidiaries have been pledged as collateral for bank demand loans of $105,501,000 to those companies.

6. Commitments and Contingencies

(a) Approved capital projects and financing commitments outstanding total approximately $1,075,000,000 at December 31, 1981, extending over three years.

(b) Noranda has guaranteed or was contingently liable for repayment of loans of associated companies to the extent of approximately $43,000,000 at December 31, 1981.

(c) As at December 31, 1981 some of Noranda's pension plans are underfunded and some are overfunded by a greater amount. The unfunded obligation is estimated at $36,500,000 and includes Fraser Inc. – $23,700,000 and Canada Wire & Cable Limited – $9,000,000.

(d) At December 31, 1981 expenditures of $46,300,000 on the Blackbird cobalt property in Idaho have been deferred. While at current prices this project would not be economic, the United States government may designate cobalt a strategic metal and provide price and financing support. If such support is not received the future viability of this project will be reassessed and some write down in the carrying cost may be required at that time.

7. Shareholders' Equity

(a) Capital stock –

		1981	1980
		(in thousands)	
Authorized:			
13,576,563	Series A cumulative redeemable convertible preferred shares of $100 par value		
200,000,000	Common shares of no par value		
Issued:			
	9½% preferred shares	$ 358,334	
	Common shares	1,283,110	$772,656
		$1,641,444	$772,656

(b) Authorized capital –

During the year, the authorized capital was increased from 150,000,000 to 200,000,000 common shares and from 5,000,000 to 15,000,000 Series A preferred shares. Of the authorized 15,000,000 Series A preferred shares, the Company has designated 5,025,000 as 9½% cumulative redeemable convertible preferred shares Series A. Each of these shares is convertible into 2.75 common shares until June 15, 1987 for which 14,000,000 common shares have been reserved.

(c) Summary of common share transactions for the year –

	Shares	Amount
	(in thousands)	
Common shares issued, beginning of year	113,274	$ 772,656
Stock option plan	90	1,283
Stock dividends	332	9,563
Maclaren acquisition adjustment	(27)	(430)
Conversion of preferred shares	1	38
Brascade Resources Inc.	12,500	500,000
Common shares issued, end of year	126,170	1,283,110
Company's pro rata interest in its shares held by subsidiary and associated companies	10,082	127,626
Net shares	116,088	$1,155,484

The earnings per share calculations have been based on the weighted average number of shares outstanding, 105,288,087 in 1981 and 100,574,355 in 1980. Fully diluted earnings assuming conversion of the preferred shares would be $1.45 per share.

(d) Summary of preferred share transactions for the year –

	Shares	Amount
	(in thousands)	
Issued to acquire MacMillan Bloedel	5,007	$500,677
Redeemed and converted during the year	1,424	142,343
Preferred shares issued, end of year	3,583	$358,334

804,967 preferred shares are held by an associated company at December 31, 1981. The Company's pro rata interest of $32,586,000 in those shares has been deducted from shareholders' equity.

(e) Summary of dividends –

	1981	1980
	(in thousands)	
During the year the following dividends were declared:		
Common – $1.40/share (1980 – $1.25/share)	$163,188	$141,132
Preferred	24,876	–
Total	188,064	141,132
Less the Company's pro rata share of dividends paid to subsidiary and associated companies	16,469	14,236
Net charge to retained earnings	$171,595	$126,896

(f) Stock options –

During the year ended December 31, 1981, 90,302 shares were issued under the Company's stock option plan for $1,283,350 and new options on 742,370 shares were granted. At December 31, 1981 options on 1,038,953 shares were outstanding exercisable at prices varying from $8.34 to $22.91 for periods up to 1989.

The Company has reserved 1,657,912 shares for issuance under this plan.

(g) Share purchase plan –

Under the Company's share purchase plan, shares are sold to a trustee for resale to employees financed by an interest-free loan from the Company. At December 31, 1981, the amount of the loan included in accounts receivable was $5,648,296.

(h) Purchases for cancellation –

Shareholders have the right to receive either cash dividends or the equivalent in common shares. Under an exemption order of the Ontario Securities Commission the Company may purchase for cancellation on an annual basis through the facilities of the Toronto Stock Exchange a number of common shares approximately corresponding in number to the common shares issued by it as stock dividends, subject to certain conditions. During 1981, 332,000 shares were issued as stock dividends and no shares were purchased for cancellation.

8. Related Party Transactions
The following summarizes the related party transactions during the year between Noranda and associated companies.

(a) Sale of goods and services at market prices on normal trade terms amounted to $52,466,000 and gave rise to accounts receivable at December 31, 1981 of $10,560,000 (1980 – $39,065,000 and $3,306,000 respectively).

(b) Purchase of goods and services at market prices on normal trade terms amounted to $114,624,000 and gave rise to accounts payable at December 31, 1981 of $7,949,000 (1980 – $28,820,000 and $6,402,000 respectively).

(c) Noranda and associated companies participate in a short-term investment pool, which gave rise to accounts receivable of $10,550,000 at December 31, 1981 (1980 – $4,555,000). Interest charges and credits are calculated at market rates.

9. Business Segment Information *(in thousands)*
Noranda operates in three industry segments: Mining of copper and other metals such as zinc, lead, silver, gold, molybdenum, phosphates and potash and related metallurgical operations; Manufacturing of brass mill products, wire and cable, iron foundry products, wire rope, plastic pipe, primary aluminum and aluminum sheet, extrusions and building products; Forest Products such as lumber, plywood, waferboard, market pulp and paper. Oil and gas activities are not yet a significant portion of Noranda's operations and are included in the Mining and Metallurgy segment.

Operations and identifiable assets by geographic area and industry segment are presented below:

(a) Geographic areas

	1981	*1980*
Revenue		
Canada – domestic	$1,235,705	$ 990,968
– export	922,526	1,121,709
	2,158,231	2,112,677
U.S.A.	872,163	776,618
Total	$3,030,394	$2,889,295
Segment operating profit		
Canada	$ 314,291	$ 547,647
U.S.A.	78,530	107,242
Total	$ 392,821	$ 654,889
Identifiable assets		
Canada	$3,897,985	$3,067,570
U.S.A.	1,188,962	645,224
	5,086,947	3,712,794
Cash and marketable investments	161,697	225,427
Total	$5,248,644	$3,938,221

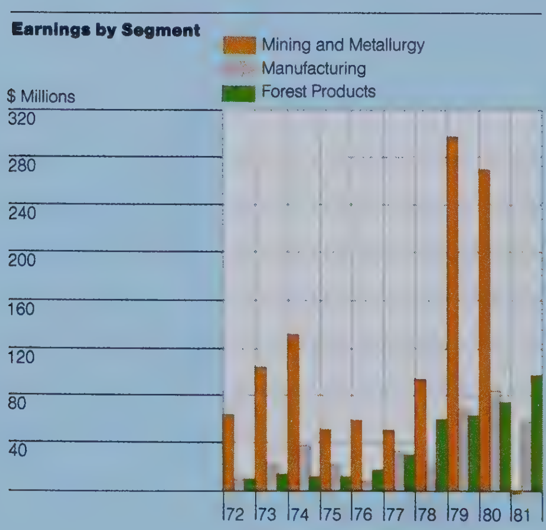
(b) Industry segments

Revenue	*1981*	*1980*
Mining and metallurgy		
Copper	$ 448,054	$ 599,524
Other metals	773,230	747,296
	1,221,284	1,346,820
Manufacturing	1,181,360	1,111,342
Forest products	731,706	619,607
	3,134,350	3,077,769
Inter-segment sales	(190,000)	(200,000)
Investment income	86,044	11,526
Total	$3,030,394	$2,889,295

Excludes Noranda's share of revenues of associated companies accounted for on an equity basis, as follows: mining operations $264,256, manufacturing $339,066, forest products $811,627 ($294,383, $259,000 and $374,992 respectively in 1980).

	1981	*1980*
Segment operating profit		
Mining and metallurgy–		
Copper	$ 21,111	$ 196,550
Other metals	159,587	248,333
	180,698	444,883
Manufacturing	95,430	112,227
Forest products	116,693	97,779
Total segment operating profit	392,821	654,889
Exploration	(121,601)	(57,261)
Income and production taxes	(59,415)	(242,242)
Minority interest	(9,079)	(28,894)
Share of earnings (losses) in associated companies	(1,503)	83,096
Interest expense	(95,444)	(48,421)
Unusual items	59,027	47,188
Earnings	$ 164,806	$ 408,355
Earnings after taxes		
Mining and metallurgy –		
Copper	$ 22,663	$ 121,423
Other metals	59,393	131,160
	82,056	252,583
Less exploration	(66,312)	(30,023)
	15,744	222,560
Manufacturing	58,613	84,211
Forest products	21,078	74,217
Earnings before borrowing cost	95,435	380,988
Less cost of borrowing (net of investment income and taxes)	10,344	(19,821)
	105,779	361,167
Unusual items	59,027	47,188
Earnings	$ 164,806	$ 408,355

	1981	1980
Total assets employed		
Mining and metallurgy –		
Copper	$ 701,244	$ 647,386
Other metals	1,763,870	1,568,482
	2,465,114	2,215,868
Manufacturing	1,254,083	829,490
Forest products	1,457,750	767,436
	5,176,947	3,812,794
Inter-segment receivables/payables	(90,000)	(100,000)
Cash and marketable investments	161,697	225,427
Total	$5,248,644	$3,938,221
Capital expenditures		
Mining and metallurgy –		
Copper	$ 66,455	$ 38,534
Other metals	230,144	183,520
	296,599	222,054
Manufacturing	203,501	37,959
Forest products	894,199	32,953
Total	$1,394,299	$ 292,966
Depreciation and amortization		
Mining and metallurgy –		
Copper	$ 36,975	$ 27,780
Other metals	61,841	54,233
	98,816	82,013
Manufacturing	27,464	26,353
Forest products	31,393	21,593
Total	$ 157,673	$ 129,959

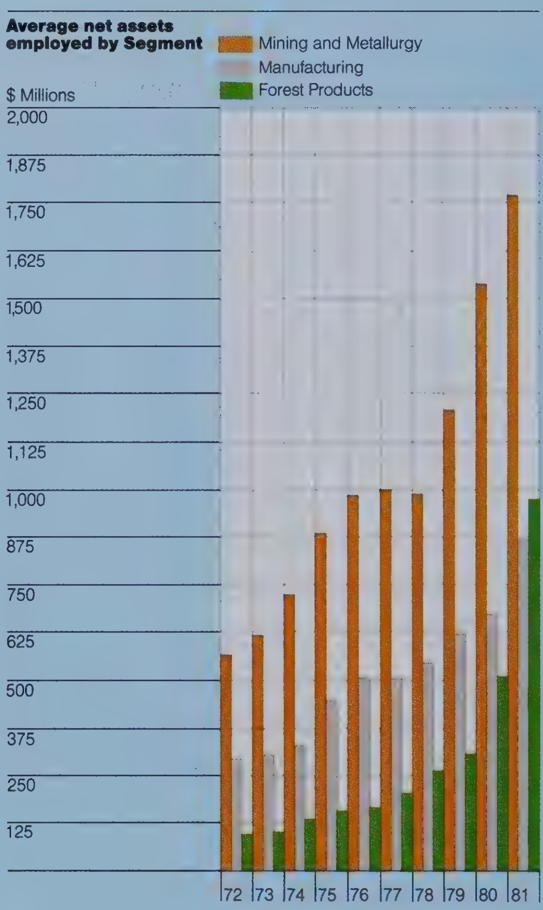


10. Unusual Items

(a) Sale of British Columbia Forest Products –
Upon acquisition of MacMillan Bloedel, Noranda disposed of its 28% interest in British Columbia Forest Products Limited for $214,940,000 resulting in an unusual gain of $76,704,000 after a provision for taxes of $34,783,000. The consolidated statement of earnings reflects Noranda's interest in the operating results of this company to May 31, 1981.

(b) Ontario Project –
With the failure to achieve mine productivity targets and declining metal prices, the Ontario mine project cannot be operated profitably within the foreseeable future. Accordingly, expenditures to December 31, 1981, including the Company's share of an associate's loss, totalling $17,677,000 after tax, have been written off.

(c) Sale of Koongarra –
In 1980 Noranda disposed of its interest in the Koongarra uranium project in Australia. The proceeds were $57,300,000 resulting in a gain of $47,188,000.



Financial Statements Another Perspective

Revenue

Over the past five years the value of all goods and services generated by the Noranda Group has exceeded $12 billion. The accompanying chart attempts to show the primary distribution of this large sum.

The bulk of the revenue — some 72% — has been paid out to suppliers and employees each year to reimburse them for materials and services rendered.

Government's direct share, in the form of taxes on earnings has averaged about 7% of total revenue. This take has resulted from tax rates that vary from 35% to 80% of earnings depending on the tax jurisdiction and nature of the business. It is important to note that this calculation excludes sales taxes, municipal property taxes and the income and other taxes paid by suppliers and employees as a result of their sharing in the total revenue. Based on the fact that government spending is known to be in the order of 40% of our economy's Gross National Product, it can be safely estimated that some 40% of Noranda's revenue finds its way into government hands from all parties who share in this revenue.

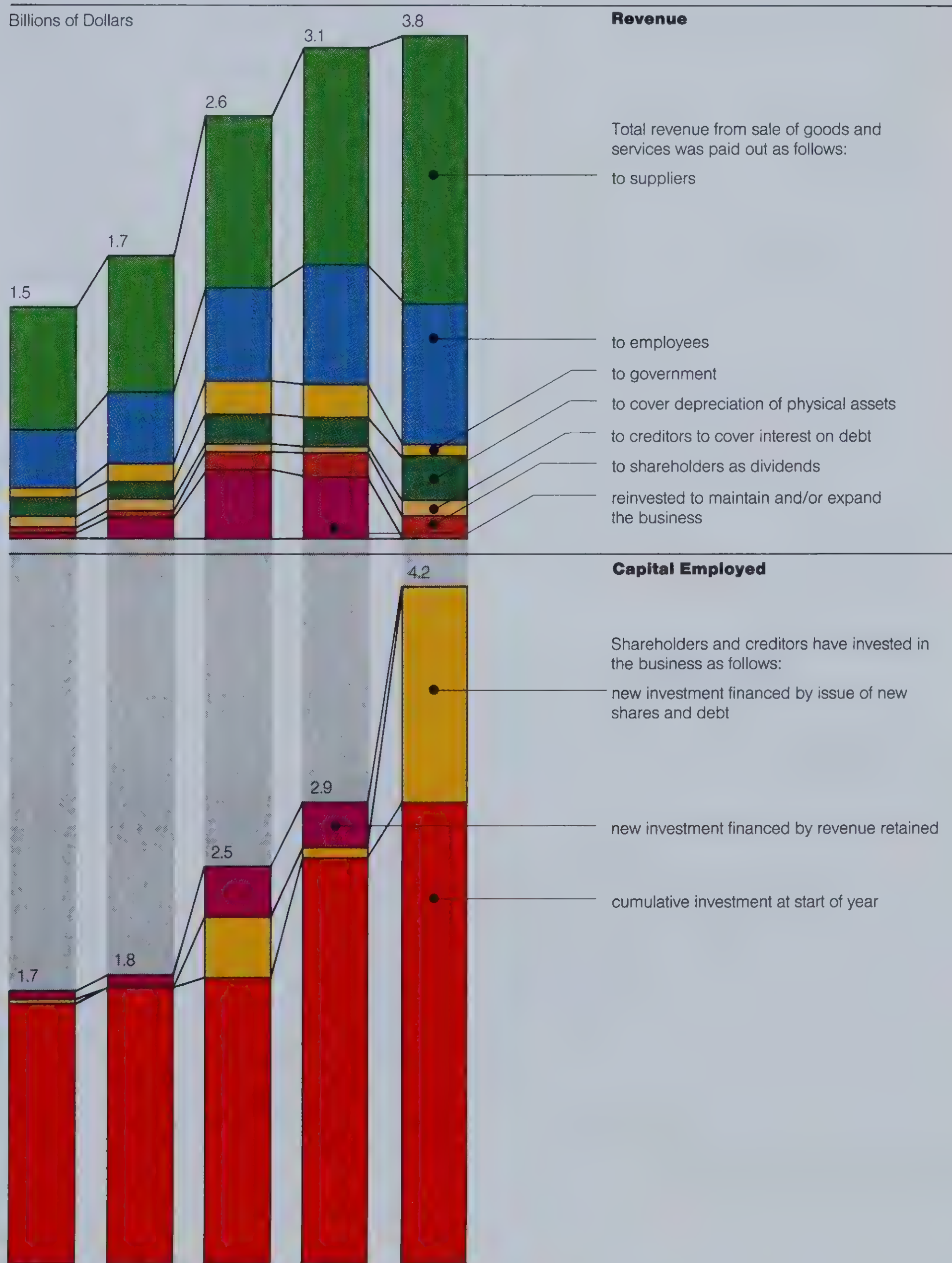
Shareholders and creditors have received an average of some 7% of revenue each year in the form of dividends and interest. In addition earnings reinvested in the business accruing to the account of shareholders has averaged some 6% of revenue. It is this retention of earnings for reinvestment in the business that offers the best measure of economic health.

Capital employed

The amount of capital now employed has grown to some $4.3 billion. This investment includes property, plant and equipment as well as the working capital needed to run the day-to-day business. It has been funded approximately 67% by shareholders through their initial investment and by creditors who have loaned money to the business, and 33% by shareholders through earnings retained in the business. As can be seen in the accompanying chart the issue of new shares and debt has represented a more significant source of new investment over the past five years than internally generated cash flow.

Return on investment

The return to shareholders and creditors, paid out and retained, has averaged 11.3% on capital employed over the past five years, sinking to the unsatisfactory level of 4.3% in 1981. Considering the cyclical nature of the industries Noranda operates in, the long lead times on new investment, the perceptibly higher average risks involved in its business, and the erosion caused by inflation, there is a need for a much higher rate of return on capital for the business to remain in a healthy state.



6.7%	10.0%	19.8%	15.8%	4.3%	**Return on Investment** profit before deducting interest on debt as a percentage of average capital employed
1977	1978	1979	1980	1981	

Domestic Operating Interests
(December 31, 1981)

Mining and Petroleum

Geco Division	Manitouwadge, Ont.	copper-zinc-silver
Division Mines Gaspé	Murdochville, Que.	copper
Babine Division	Granisle, B.C.	copper-gold
Boss Mountain Division	Hendrix Lake, B.C.	molybdenum
Central Canada Potash	Colonsay, Sask.	potash
Chadbourne Mine	Noranda, Que.	gold
F. Group	Ignace, Ont.	zinc-copper-lead-silver
Lyon Lake Division	Ignace, Ont.	zinc-copper-lead-silver
Matagami Division	Matagami, Que.	zinc-copper-silver
Heath Steele Mines		
Little River Joint Venture	Newcastle, N.B.	copper-zinc-lead-silver
Alberta Sulphate	Horseshoe Lake, Alta.	sodium sulphate
Brenda Mines	Peachland, B.C.	copper-molybdenum
Oil and Gas Division	Calgary, Alta.	oil and gas
Brunswick Mining and Smelting	Bathurst, N.B.	zinc-lead-copper-silver
Canadian Hunter	Calgary, Alta.	oil and gas
Kerr Addison Mines	Virginiatown, Ont.	gold
Agnew Lake Mines	Espanola, Ont.	uranium
Les Mines Gallen	Noranda, Que.	zinc-silver
Mattabi Mines	Ignace, Ont.	zinc-copper-silver
Pamour Porcupine Mines	Pamour, Ont.	gold
Schumacher Division	Schumacher, Ont.	copper-gold
Placer Development	Vancouver, B.C.	
Craigmont Mines	Merritt, B.C.	copper
Endako Mine	Fraser Lake, B.C.	molybdenum
Equity Silver Mine	Houston, B.C.	silver, copper
Gibraltar Mines	McLeese Lake, B.C.	copper
Placer CEGO Petroleum	Calgary, Alta.	oil and gas
Noranda Sales	Toronto, Ontario	resource marketing
Nutrite	Montreal, Que.	fertilizer marketing

Metallurgical

Horne Division	Noranda, Que.	copper smelter
Division Mines Gaspé	Murdochville, Que.	copper smelter
Division CCR	Montreal East, Que.	copper refiner
Belledune Fertilizer	Belledune, N.B.	diammonium phosphate
Brunswick Mining and Smelting	Belledune, N.B.	lead smelter
Canadian Electrolytic Zinc	Valleyfield, Que.	zinc reduction
Federated Genco	Burlington, Ont.; Lachine, Que.	metal alloys

Forest Products

Fraser Inc.	Edmundston, N.B.	
	Mills: Atholville, Edmundston, Kedgwick and Plaster Rock, N.B.	boxboard, lumber and pulp
	Thorold, Ont.	paper
James Maclaren Industries	Buckingham, Que.	
	Mills: Masson, Thurso and Notre Dame du Laus, Que.	newsprint, pulp and lumber
	High Falls, Buckingham, and Masson, Que.	hydro power
Sogefor	Lac-des-Iles, Que.	particleboard
Normick Perron	*Mills:* La Sarre, Beattyville, Amos, and Senneterre, Que.; Kirkland Lake and Cochrane, Ont.	lumber, plywood and waferboard
Maniwaki Industries	Maniwaki, Que.	lumber, veneer and flooring

MacMillan Bloedel Limited	Vancouver, B.C.	
	Mills and Plants: Powell River and Port Alberni, B.C.	newsprint
	Nanaimo, Port Alberni, and Powell River, B.C.	pulp
	New Westminster, B.C.	paper
	Port Alberni, Nanaimo, Vancouver, Chemainus, New Westminster, and Powell River, B.C.	lumber
	Port Alberni and Vancouver, B.C.	plywood
	Nipigon, Ont.	
	Hudson Bay, Sask.; Thunder Bay, Ont.	waferboard
	Vancouver, B.C.	particleboard
	Sturgeon Falls, Ont.	hardboard siding
	Vancouver, B.C.	bags
	Montreal, Que.; Pembroke, Rexdale, Guelph and London, Ont.; Winnipeg, Man.; Regina, Sask.; Calgary and Edmonton, Alta.; New Westminster, B.C.	corrugated containers
	28 Sales Offices and Distribution Centres	
Northwood Mills	Toronto, Ont.	
Building Materials Division:	Burnaby, B.C.; Edmonton and Calgary, Alta.; Winnipeg, Man.; Brampton and London, Ont.; Boucherville and St. Augustin, Que.; Moncton, N.B.	lumber and panelboard
Northwood Pulp and Timber	Prince George, B.C.	lumber, pulp, waferboard and plywood
	Mills: Houston, Prince George, Shelley and Upper Fraser, B.C. and Chatham, N.B.	
B.C. Chemicals	Prince George, B.C.	chlorate and tall oil
Manufacturing		
Canada Wire and Cable	Toronto, Ont.	copper rod, wire and cable
	Plants: Toronto, Fergus and Orangeville, Ont.; Montreal East and Quebec City, Que.; Winnipeg, Man.; Weyburn, Sask.; New Westminster, B.C.	
	Eight distribution centres	
Canwirco Inc.,	Toronto	magnet wire
	Plants: Simcoe and Belleville, Ont.; Montreal, Que.	
Radionics	Toronto	diagnostic medical instruments
Canplas Industries	Barrie, Ont.	plastic moulding
	Plants: Barrie, Ont., and New Westminster, B.C.	
Grandview Industries	(Rexdale) Toronto	plastic moulding and extrusion
	Plants: Rexdale, Brampton and Mississauga, Ont.; Weyburn, Sask.; Langley, B.C.	
James Maclaren Industries		
Norpack	Kanata, Ont.	computer graphics display system
Lumonics	Kanata, Ont.	lasers
Noranda Metal Industries	Montreal East, Que.	copper sheet, strip, tube and alloys
	Plants: Mont Joli (2), Que. and Moncton, N.B.	secondary metal
NorSand Metals Inc.	Arnprior, Ont.	high nickel tube
Wire Rope Industries	Montreal, Que.	steel wire rope, slings and strands
	Plants: Pointe Claire, Que., and Vancouver, B.C.	
	12 service centres	
Gourock Division	Montreal, Que., and Halifax, N.S.	sporting and fishing nets

International Operating Interests
(December 31, 1981)

American Hunter	Denver, Colorado, U.S.A.	oil and gas
Bridon American	Wilkes Barre, Pa., U.S.A.	hi-carbon wire and steel wire rope
Canada Wire and Cable		
Carol Cable Company Inc.	Rhode Island, U.S.A. *Plants:* Pawtucket, Woonsocket, Warren, Lincoln, and Central Falls, R.I.; Manchester, N.H.; New Bedford and Taunton, Mass.; River Grove, Ill.; Rancho Dominguez, Cal.	wire and cable
Canada Wire and Cable (International)		wire and cable and other manufactured products
Alambres Dominicanos	Dominican Republic	
Fadaltec	Colombia	
Iconel	Venezuela	
Industrias Conductores Monterrey	Mexico	
Nigerchin Electrical Development Co.	Nigeria	
Tolley Holdings	New Zealand	
Tycan, Australia, Pty. Ltd.	Australia	
Transwire	South Africa	
Cia Minera Las Cuevas	Mexico	fluorspar
Eluma S.A.	Brazil	copper and brass mills
Fraser Inc.		
Fraser Paper	Madawaska, Maine, U.S.A.	paper
Kerr Addison Mines		
Mogul of Ireland	Republic of Ireland	zinc-lead
MacMillan Bloedel Limited	*U.S.A.*	
	Pine Hill, Ala.	linerboard
	Pine Hill, Ala.; Edenton, N.C.;	lumber
	Elmira, N.Y.; Jersey City and Union, N.J.; Odenton, Maryland; Cleveland, Ohio; Chicago, Ill.; Little Rock, Arkansas; Magnolia, Miss.; Houston, Texas	corrugated containers
	13 sales offices and distribution centres.	
	U.K.	
	Hatfield, Hertfordshire; Southall, Hanwell; West Auckland, Durham; Nelson, Lancashire; Weston-super-Mare, Avon; Irvine, Ayrshire	corrugated containers
Koninklijke Nederlandse Papierfabrieken	Holland & Belgium	paper and packaging
Celupal S.A.	Spain	paper
Embrasca-Empreendimentos Florestais e Agricolas	Brazil	lumber
Noranda Aluminum	New Madrid, Mo., U.S.A.	aluminum reduction, wire and cable,
Norandal	Huntingdon, Tenn., U.S.A.	aluminum sheet and foil
Norandex	Cleveland, Ohio, U.S.A. *Plant and 65 distribution centres*	aluminum, building products
Noranda Building Products	Chicago, Illinois, U.S.A.	
Friguia	Republic of Guinea	alumina
Noranda Lakeshore Mine	Arizona, U.S.A.	copper
Noranda Metal Industries		
French Tube Division	Newtown, Conn., U.S.A.	specialty tube
Noranda Sales		
Noranda Sales Corporation of Canada	London, England,	resource marketing
Rudolf Wolff	London, England	commodity brokerage
Rudolf Wolff Commodity Brokers	New York, U.S.A.	commodity brokerage
Canadian American Metal	New York, U.S.A.	resource trading
Norcoal	Charleston, West Virginia	coal trading
Elnor Comercio E Representacoes S.A.	Sao Paulo, Brazil	resource marketing
Northland Gold	Alaska, U.S.A.	gold
Northwood Pulp and Timber		
Northwood Panelboard	Bemidji, Minn., U.S.A.	waferboard
Placer Development		
Marcopper Mining	Philippines	copper
McDermitt Mine	Nevada, U.S.A.	mercury
Tara Exploration and Development		
Tara Mines	Republic of Ireland	zinc-lead

Financial History

($ in millions)

Earnings

	1972	1973	1974	1975	1976	1977	1978	1979	1980	**1981**
Revenue	584.2	850.6	1,151.9	1,159.3	1,234.8	1,395.8	1,691.1	2,484.7	2,889.3	**3,030.4**
Expense — excluding interest	489.7	721.7	889.9	1,046.5	1,118.1	1,250.3	1,426.0	1,810.8	2,244.6	**2,700.2**
Interest expense	19.2	19.8	33.8	45.3	61.7	71.9	64.8	65.3	48.4	**95.4**
Income and production taxes	35.8	54.2	106.6	41.5	25.1	22.7	90.5	227.0	242.2	**59.4**
Minority interest in profits of subsidiaries	(2.0)	1.3	17.1	10.1	10.1	12.6	24.8	57.2	28.9	**9.1**
Earnings of Noranda and subsidiaries	41.5	53.6	104.5	15.9	19.8	38.3	85.0	324.4	325.2	**166.3**
Share of earnings in associated companies	27.8	67.9	50.4	34.6	26.9	33.5	49.3	70.1	83.1	**(1.5)**
Earnings	69.3	121.5	154.9	50.5	46.7	71.8	135.2	394.5	408.4	**164.8**

Financial Position

	1972	1973	1974	1975	1976	1977	1978	1979	1980	**1981**
Capital employed —										
Working capital	129.3	146.6	182.9	188.0	197.5	167.3	281.6	687.4	821.5	**867.0**
Investments and advances	205.5	220.6	326.0	372.2	361.9	387.8	410.0	406.1	529.4	**1,159.3**
Fixed assets — net	526.4	582.7	685.0	805.5	855.5	898.0	958.8	1,236.0	1,536.9	**2,037.2**
Other assets	52.2	69.6	90.8	104.6	118.5	115.8	123.3	189.3	262.5	**316.0**
	913.4	1,019.5	1,284.7	1,470.3	1,533.4	1,568.9	1,773.7	2,518.8	3,150.3	**4,379.5**
Capital sources —										
Shareholders' equity	487.9	577.7	692.8	696.4	715.3	758.7	884.4	1,463.2	2,001.0	**2,869.4**
Long-term debt	349.9	335.6	383.7	533.1	603.4	588.9	604.1	602.5	580.5	**922.3**
Minority interest in subsidiaries	31.2	44.2	99.9	114.4	120.3	128.2	150.9	194.0	199.0	**210.2**
Other	44.4	62.0	108.3	126.4	94.4	93.1	134.3	259.1	369.8	**377.6**
	913.4	1,019.5	1,284.7	1,470.3	1,533.4	1,568.9	1,773.7	2,518.8	3,150.3	**4,379.5**

Changes in Financial Position

	1972	1973	1974	1975	1976	1977	1978	1979	1980	**1981**
Sources —										
From operations	98.9	135.6	244.3	126.9	83.9	145.9	218.3	605.9	570.0	**301.2**
Issue of shares and debt (net)	28.9	(14.3)	38.4	139.3	70.3	(10.1)	36.4	255.8	228.7	**1,028.6**
Other (net)	16.9	11.3	8.9	1.0	8.8	(3.1)	15.7	(21.2)	(16.4)	**131.2**
	144.7	132.6	291.6	267.2	163.0	132.7	270.4	840.5	782.3	**1,461.0**
Application —										
Dividends	28.0	32.9	42.3	47.2	28.3	28.3	30.7	70.8	126.9	**162.0**
Capital expenditure —										
Fixed assets	109.6	82.9	101.7	158.2	115.6	119.6	115.1	284.9	293.0	**596.5**
Investments and advances (net)	8.9	(36.0)	73.4	31.0	(21.9)	7.3	(2.1)	(2.0)	(2.1)	**573.3**
Other, including acquisitions	8.9	35.5	37.9	25.7	31.6	7.6	(12.5)	81.0	230.3	**83.7**
Increase (decrease) in working capital	(10.7)	17.3	36.3	5.1	9.4	(30.1)	114.2	405.8	134.2	**45.5**
	144.7	132.6	291.6	267.2	163.0	132.7	270.4	840.5	782.3	**1,461.0**

* Share data

	1972	1973	1974	1975	1976	1977	1978	1979	1980	**1981**
Per share — $										
Earnings	0.98	1.72	2.20	0.71	0.66	1.01	1.91	4.70	4.06	**1.33**
Dividends	0.40	0.47	0.60	0.67	0.40	0.40	0.43	0.85	1.25	**1.40**
Market price range — $										
High	14.00	19.79	18.00	13.25	13.25	11.46	13.00	22.83	33.63	**36.38**
Low	10.87	13.83	8.88	9.08	8.79	6.54	6.88	12.13	22.13	**19.38**
Close	13.96	16.71	9.50	9.71	9.67	8.33	12.25	22.37	30.00	**22.50**
Common shares issued (000)	72,893	73,031	73,327	73,354	73,392	73,394	75,548	101,536	113,274	**126,170**
Preferred shares issued (000)	—	—	—	—	—	—	—	—	—	**3,583**

* Previous years data adjusted for the 3 for 1 split in August, 1979

noranda

Printed in Canada